Part XI Private Operating Foundations (See instructions and Question I, Part V)

1 If the foundation has received a ruling or determination letter that it is an "operating" fo... division and such ruling is effective for 1974, enter the date of such ruling

	Taxable year 1974	1973	Prior three years 1972	1971	Total
2 (a) Adjusted net income (from line 29(c), Part I for 1974. Enter corresponding amount for prior years)					
(b) 85% of line (a)					
(c) Qualifying distributions from line 4, Part X for 1974 (enter corresponding amount for prior years)			NOT APPLICABLE		
(d) Amounts included in (c) not directly for active conduct of exempt activities					
(e) Qualifying distributions directly for active conduct of exempt purposes (line (c) less line (d))					
3 Complete the alternative test in (a), (b) or (c) on which the organization relies.					
(a) "Assets" alternative test—enter: (i) Value of all assets					
(ii) Value of assets qualifying under section 4942(j)(3)(B)(i)					
(b) "Endowment" alternative test—enter ⅔ of minimum investment return shown on line 6(b) Part IX, for 1974 (enter ⅔ of comparable amount for prior years)					
(c) "Support" alternative test—enter: (i) Total support other than gross investment income (interest, dividends, rents or royalties)					
(ii) Support from general public and 5 or more exempt organizations as provided in section 4942(j)(3)(B)(iii)					
(iii) Largest amount of support from an exempt organization (see instructions)					
(iv) Gross investment income					

☆ U.S. GOVERNMENT PRINTING OFFICE: 1974 O-544-043

RESEARCH CORPORATION

AUTHORIZATION FOR CHECK REQUEST

DATE: July 15, 1976

TO: F. Lauro

Please issue a check -

Payable to INTERNAL REVENUE SERVICE ID 13-1963407

In the amount of $ 3,559.00

Requested for BALANCE DUE ON FEDERAL EXCISE TAX - FISCAL YEAR ENDED OCTOBER 31, 1975

ID #

RESEARCH CORPORATION 13-1963407
405 LEXINGTON AVE.
NEW YORK, N. Y. 10017

5239

July 15,1976 1-2/210

PAY TO THE ORDER OF INTERNAL REVENUE SERVICE $3,559.00

EXACTLY 3559 AND 00 CTS DOLLARS

RESEARCH CORPORATION

THE CHASE MANHATTAN BANK
National Association
422 Lexington Avenue, New York, N.Y. 10017

⑈0210⑈0002⑆ 003⑈1⑈03794⑧⑈

XX Chase - Treasurers Account

_____ Hanover - GF Regular Account

Charge A/C 320

Check No. 5239

Date Paid 7/15/76

APPROVED FOR PAYMENT

Fred Lauro,
Comptroller

RESEARCH CORPORATION - 13-1963407
405 Lexington Avenue, New York, N. Y. 10017
FORM 990-PF PAGE 2 BALANCE SHEETS - PART III
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

	Beginning Year 1974	End Year 1975
ASSETS		
1. Cash	$ 229,564	$ 237,418
2) Temporary cash investments, at cost	700,000	200,000
) Dividends and interest receivable	283,845	325,297
) Royalties receivable	380,000	207,000
) Allowance for royalties blocked by foreign governments		(137,000)
) Receivables from Research-Cottrell, Inc.	389,000	242,000
) Grant receivable-National Science Foundation (Note 2)		22,000
	1,982,409	1,096,715
9. Investment Fund		
) Uninvested Cash	(323,124)	322,963
6. Marketable securities at cost (market quotations, $36,547,131 and $35,962,877 respectively)	40,929,498	37,830,651
Allowance for possible Losses	(375,000)	(370,000)
Receivable for securities sold	2,026,699	614,883
Payable for securities purchased	(2,922,784)	(614,434)
	39,340,289	37,784,063
8. Research-Cottrell, Inc. (Note 3) Capital Stock at cost (at market, $13,362,500 and $3,648,750 respectively)	765,710	765,710
12) Mortgage	150,000	120,000
13. Other Investments	109,446	101,899
Prepaid Expenses	1,586	9,573
10(a) Fixed assets, at cost	160,108	171,012
10(b) Less accumulated depreciation	(26,182)	(94,625)
11. Total Assets	$42,423,366	$39,954,347
LIABILITIES		
17. Grants payable	$ 1,642,170	$ 1,026,133
) Royalties payable	646,094	614,178
18. Accounts payable	62,446	70,236
22) Federal excise tax payable (Note 4)	271,000	144,000
23. Total Liabilities	$ 2,621,710	$ 1,854,547
19) FUND BALANCE	$39,801,656	$38,099,800
21)		
22. TOTAL LIABILITIES and FUND BALANCE	$42,423,366	$39,954,347

RESEARCH CORPORATION
405 LEXINGTON AVENUE
NEW YORK, NEW YORK 10017

Notes to Financial Statements

1. **Summary of significant accounting policies of Research Corporation (the Foundation):**

   (a) *Security valuation*—the Foundation carries its investments at cost less an allowance for possible losses where there is evidence that the carrying value of particular securities has been permanently impaired. Gains/losses on sales of securities are computed on the first-in, first-out ("FIFO") method.

   (b) *Income and expenses*—interest income is recorded as earned, dividends are accrued as of the ex-dividend date. Grants are recorded at the time of approval by the Board of Directors.

   (c) *Pension plan*—the Foundation has a non-contributory pension plan covering substantially all of its employees. The total pension expense for fiscal years 1975 and 1974 was $30[illegible] and $23[illegible] respectively, which includes amortization of prior service cost over a period of 20 years. The Foundation's policy is to fund pension cost accrued. The Foundation anticipates no material increase in costs as a result of the Employee Retirement Income Security Act of 1974.

2. **Grant from the National Science Foundation, see "Patent Awareness Program" on page 29 for details.**

3. **The investment in Research-Cottrell, Inc. at October 31, 1975 represents the cost of:**

16.5% (693,000 shares) of its outstanding capital stock	$763,710
The unpaid balance of a 11½% purchase money mortgage payable in installments of $30,000 per annum to October 31, 1979	120,000
	$883,710

RESEARCH CORPORATION
405 LEXINGTON AVENUE
NEW YORK, NEW YORK 10017

Based on audited financial statements as of October 31, 1975, the equity of the Foundation in the net assets of Research Control Inc. exceeded its cost basis by approximately $5,705,000. The stock of Research Control Inc. is owned by the Foundation is not registered with the Securities and Exchange Commission. The closing price of unrestricted stock of the same class on the American Stock Exchange on October 31, 1975 was $17.50 per share, on December 17, 1975 the closing price was $13.50 per share.

4. Research Corporation is a private foundation exempt from income tax under section 501 (c) (3) of the Internal Revenue Code. As a private foundation it is subject to a 4% Federal excise tax on net investment income, as defined. The Foundation and its counsel are of the opinion that all its activities are integrally related to its charter ed philanthropic purposes and none of them constitute unrelated business. Solely at the request of the Internal Revenue Service, the Foundation filed under protest unrelated business income tax returns for the years 1961 through 1971 with regard to one of its activities for information purposes only. None of these returns showed net taxable income. The Internal Revenue Service examination of several returns, including the year 1973, resulted in no assessment of unrelated business tax and it is expected there will be no assessment of such taxes for the years 1974 and 1975.

5. Purchases and sales of marketable securities (exclusive of U.S. Government securities, short-term notes and certificates of deposit) aggregated $23,354,000 and $25,104,000 in 1975, and $20,378,000 and $29,910,000 in 1974.

6. The Foundation has a lease agreement for office space at an annual rental of $120,000, plus escalation charges, which expires October 1, 1980.

7. The Foundation has initiated an action against Salomon Brothers and others contesting the attempt by Salomon Brothers to rescind the purchase of 10,500 shares of Equity Funding Corporation common stock from the Foundation and has also filed a claim in the Equity Funding bankruptcy proceeding for the original purchase price of such shares to the Foundation. In a related action for actual and punative damages a claim has been made against the Foundation and others alleging the use of inside information with respect to the sale of Equity Funding shares. The Foundation denies the use by it of any inside information with respect to the sale of such shares.

Auditors' Report

Board of Directors,
Research Corporation,
New York, N.Y.

We have examined the balance sheet of RESEARCH CORPORATION as of October 31, 1975 and the related statements of income, grants and expenses and of changes in fund for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances. We previously examined and reported upon the financial statements of Research Corporation for the year ended October 31, 1974.

In our opinion, the aforementioned statements present fairly the financial position of Research Corporation at October 31, 1975 and 1974, and the results of its operations and changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

COOPERS & LYBRAND

New York, December 17, 1975

32-635 O - 78 - 25

RESEARCH CORPORATION - 13-1963907
405 Lexington Avenue, New York, N. Y. 10017
FORM 990 PF - PAGE 2 PART III - LINE 9 of BALANCE SHEET
OTHER INVESTMENTS (MINORITY INTEREST)
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

	Question	Answer
(a)	Name of Corporation	Research-Cottrell, Inc.
	Class of Stock	Common
	Voting or non-voting	Voting
(b)	Number of shares owned:	
	Beginning of taxable year	695,000
	End of taxable year	695,000
(c)	Total number of shares outstanding	4,211,990
(d)	Value of stock as recorded in the boods and included in Line 9	$ 765,710
(e)	Cost value of stock	$ 765,710
	Fair market value	12,162,500
(f)	Date acquired	November 1, 1954
(g)	Manner of acquisition	Purchase
(h)	Dividends received	$ 55,600

(e) The investment in Research-Cottrell, Inc. represents the cost of 16.5% (695,000 shares) of its outstanding capital stock, $765,710.

*The sotck of Research-Cottrell, Inc. owned by the Corporation is not registered with the Securities Exchange Commission. The closing price of unrestricted stock of the same class on the American Stock Exchange on October 31, 1975 was $17.50 per share.

RESEARCH CORPORATION - 13-1963407
405 Lexington Avenue, New York, N. Y. 10017
FORM 990-PF - PAGE 2 - BALANCE SHEET LINE 12 - PART III
OTHER ASSETS
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

Description	Date Acquired	Number of Shares	Book Value
Citizens Realty Company $105,000 - 20 year mortgage, interest at 4 1/4%, payable $650.32 monthly to 1/1/76	1/ 1/56		$ 1,899
Questar Corporation			
Capital stock contributed	1/20/64	2,000	14,000
Capital stock contributed	1/20/65	2,000	14,000
Valued @ $7.00 per share		4,000	28,000
Secured Interest Bearing Loan Relative to Apt. 12C South, 1025 Fifth Avenue, New York, N. Y.	2/ 1/68		71,000
Research-Cottrell, Inc.			
Process Patents - carrying value	11/ 1/54		1,000
TOTAL			$101,899

RESEARCH CORPORATION - 13-1963407
405 Lexington Avenue, New York, N. Y. 10017
FORM 990PF - PAGE 1 - PART I - LINE 14 thru 24
SCHEDULE OF EXPENDITURES
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

	Col. B & C Line 14 thru 24
Compensation of Officers	$ 142,416
Other Salaries	642,806
Other Employee Benefits	43,728
Investment, Legal, Financial and Other Professional Services	593,787
Depreciation	5,325
Taxes	26,671
Rent	130,002
Pension Plan Contribution	182,683
Other Expenses:	
Maintenance - Equipment	1,779
Supplies	16,905
Travel	67,512
Building Services	804
Subscriptions	6,349
Telephone & Telegraph	31,047
Postage	3,970
Patent Office Exhibit	150
Association Memberships	7,124
Publications	39,418
Consultant Fees	42,675
Word-One	23,321
Employee Recruiting	739
Temporary Office Help	8,128
General Insurance	3,228
Technical Assistance	20,624
Miscellaneous	5,913
Other Expenses (Line 22)	279,686
Total Expenditures	2,047,104
Less: Expenses related to NSF Grant (incl. above)	(108,000)
Add: Contributions, Gifts, Grants	
TOTAL LINE 24	$1,939,104

RESEARCH CORPORATION - 13-[illegible]
405 Lexington Avenue, New York, N.Y. [illegible]
FORM 990-PF - PAGE 1 - LINE ITEM 24 COL. B & C
ANALYSIS OF EXPENDITURES
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

	40% Gen. & Adm.	Invention Adm.	Col. B & C Total Inv. Adm. & Gen. & Adm.
Salaries	$146,442	$ 638,780	$ 785,222
Fringe Benefits	47,146	205,648	252,794
Maintenance-Equipment	188	1,591	1,779
Supplies	2,806	14,099	16,905
Travel:			
Staff	7,029	52,443	59,472
Board of Directors	6,948		6,948
Advisory Committee		1,092	1,092
Legal:			
Patent Prosecution		465,501	465,501
General	5,858		5,858
Subscriptions	1,173	5,176	6,349
Telephone & Telegraph	4,266	26,781	31,047
Word-One		23,321	23,321
Postage	3,970		3,970
Association Memberships	2,649	4,475	7,124
Audit	7,340		7,340
Publications	6,386	33,032	39,418
Technical Assistance		20,624	20,624
Employee Recruiting	165	574	739
Local & State Taxes	288		288
Consultants' Fees	4,866	37,809	42,675
Patent Office Exhibit		150	150
Temporary Office Help	78	8,050	8,128
Miscellaneous	1,065	4,848	5,913
Office Occupancy	18,675	120,684	139,359
	267,338	1,664,678	1,932,016
Add: Investment Service & Custody Fees - 100%	115,088		115,088
Less: Expenses related to NSF Grant (incl. above)		(108,000)	(108,000)
Total Line 24	$382,426	$1,556,678	$1,939,104

RESEARCH CORPORATION
SUMMARY OF INVESTMENT FUND
OCTOBER 31,1975

ALL PORTFOLIOS COMBINED

	BOOK COST	MARKET VALUE	% TO TOTAL MARKET
UNINVESTED CASH	$ 322,963	$ 322,963	0.9
MARKETABLE SECURITIES			
Common Stocks	27,196,465	26,357,091	71.5
Bonds; Non-Convertible	9,974,442	9,530,389	25.8
Short Term Notes	659,744	659,651	1.8
	37,830,651	36,547,131	
TOTAL	38,153,614	36,870,094	100.0
Allowances for Possible Losses	(370,000)		
Receivable for Securities Sold	614,883	614,883	
Payable for Securities Purchased	(614,434)	(614,434)	
GRAND TOTAL	$37,784,063	$36,870,543	

COMBINED PORTFOLIOS 10/31/75

	Maturity Date	Interest Rate	Book Cost	Market Value	% To Total Market
Uninvested Cash			$ 322,963	$ 322,963	.9
SHORT TERM NOTES					
Bank of Nova Scotia	11/75	5.50	300,000	300,000	
Thirteen Banks for Co-Ops *	12/75	8.80	40,012	39,818	
U.S. Treasury Bills	12/75		9,829	9,930	
U.S. Treasury Bills	12/75	6.82	112,959	112,959	
U.S. Treasury Bills	1/76	6.09	196,944	196,944	
			659,744	659,651	1.8
BONDS					
1-10 YEARS MATURITY					
Federal National Mortgage	6/79	7.85	381,467	392,925	
Coastal States Gas(Convertible)	5/85	5.37	200,000	117,500	
10-20 YEAR MATURITY					
Marine Midland Bank	4/94	8.12	298,500	252,750	
OVER 20 YEAR MATURITY					
Caterpillar Tractor	5/99	8.60	490,000	490,000	
Caterpillar Tractor	11/99	9.75	48,750	50,188	
Central Illinois Light	3/05	9.25	240,313	241,250	
Central Illinois Public Service	3/04	8.50	202,750	179,500	
Chrysler	11/98	6.00	507,183	312,125	
Exxon	11/97	6.00	138,360	158,000	
General Motors	4/05	8.62	251,250	251,250	
Government National Mortgage	12/98	6.50	822,590	798,884	
Houston Light & Power	2/01	7.25	329,137	280,000	
J.Ray McDermott	12/99	9.70	725,000	735,875	
Mobil Oil	10/01	7.37	379,938	385,313	
Mobisco	5/01	7.75	223,345	215,313	
Pfizer	4/99	8.50	243,750	243,750	
Public Service of Oklahoma	1/04	8.25	252,188	219,063	
Quaker Oats	6/01	7.70	451,310	410,625	
Shell Oil	5/05	8.75	483,875	499,375	
South Central Bell Telephone	8/13	8.25	90,587	92,625	
Southern Bell Tel & Telegraph	3/13	7.62	445,620	435,000	
Southern Bell Tel & Telegraph	2/14	8.00	471,675	441,250	
Southwestern Bell Telephone	9/09	7.75	307,189	308,875	
Standard Oil of Indiana	6/05	8.37	569,370	582,000	
Texaco	6/01	7.75	443,100	460,000	
U.S. Treasury Bonds	2/00	7.87	383,500	390,000	
U.S. Treasury Bonds	8/00	8.37	244,570	254,453	
Xerox	11/99	8.62	349,125	332,500	
Total Bonds			$9,974,442	$9,510,389	25.8

* Computer error reclassified

EQUITIES

	Number of Shares	Book Cost	Market Value	% of Total Market
FINANCIAL				
Banks				
Citicorp	11,100	$ 348,932	$ 298,278	
J.P. Morgan	6,900	364,783	327,750	
Total Banks		713,715	626,028	
Insurance				
Capital Holding	8,000	159,781	181,001	
Connecticut General	17,000	628,466	675,750	
Equity Funding	10,500	371,023		
Government Employees	7,000	173,877	65,628	
Hartford Steam Boiler	2,000	97,500	64,500	
Provident Life & Accident	7,500	262,500	183,750	
Total Insurance		1,692,147	1,170,629	
Other Financial				
Federal National Mortgage	15,000	276,560	219,375	
Gelco-Feld	30,000	290,000	318,750	
Gen. American Transportation	5,000	241,420	140,625	
Total Other Financial		807,980	678,750	
Total Financial		$3,213,842	$2,475,407	6.7
TRANSPORTATION				
Air				
Delta Air Lines	5,400	266,020	167,400	
National Air Lines	11,000	155,990	119,625	
Northwest Air Lines	8,000	175,086	145,001	
Total Airline		597,096	432,026	
Truck				
Overnite Transportation	14,000	266,280	283,500	
Railroad				
Southern Railway	5,000	170,245	261,250	
Total Transportation		$1,033,621	$ 976,776	2.6

EQUITIES (Continued)

PUBLIC UTILITIES	Number of Shares	Book Cost	Market Value	
Communications				
American Telephone & Telegraph	5,000	$ 234,451	$ 246,875	
Communications Satellite	7,000	338,829	248,500	
Continental Telephone	18,000	187,388	207,000	
Total Communications		760,668	702,375	
Electric & Gas				
Texas Utilities	8,000	259,033	164,000	
Total Public Utilites		$1,019,701	$ 866,375	2.4
CONSUMER				
Consumer Products				
Avon Products	3,400	281,724	139,400	
Coca Cola	2,400	276,858	196,000	
Colgate Palmolive	15,000	327,075	433,126	
Gillette	9,000	381,119	272,250	
Interco	3,000	110,057	113,250	
International Flavors & Fragrances	10,120	375,845	251,736	
Procter & Gamble	6,600	662,914	585,750	
R.C.A.	10,000	180,563	180,000	
Revlon	6,000	396,187	452,251	
Standard Brands	10,000	330,799	382,500	
V.F.	10,000	128,291	250,000	
Total Consumer Products		3,351,432	3,255,263	
Drugs & Health Care				
Abbott Laboratories	13,000	431,920	503,750	
American Home Products	7,900	318,229	276,500	
American Sterilizer	30,000	347,558	195,000	
Becton Dickinson	5,000	171,300	182,500	
Johnson & Johnson	500	40,388	44,750	
Eli Lilly	9,500	382,729	530,814	
Merck	7,720	307,558	578,035	
Pfizer	12,500	439,566	365,938	
R.P. Scherer	5,000	97,691	46,250	
Total Drugs & Health Care		2,586,938	2,718,537	
Leisure Time				
Capital Cities Communications	3,000	128,415	135,000	
Eastman Kodak	7,920	738,476	734,971	
MCA	4,000	101,777	116,000	
Warner Communications	10,000	171,600	184,750	
Total Leisure Time		1,140,268	1,169,721	

EQUITIES (Continued)

	Number of Shares	Book Cost	Market Value	% of Total Market
CONSUMER (Continued)				
Retail				
S.S. Kresge	11,600	$ 331,116	$ 391,500	
Sears Roebuck	3,500	239,132	238,438	
Total Retail		570,248	629,938	
Total Consumer		$7,648,886	$8,013,459	21.7
ENERGY				
Oil & Gas				
Atlantic Richfield	5,200	511,060	486,200	
Cities Service	5,120	230,918	217,600	
Exxon	9,000	711,984	802,126	
General American Oil	7,426	309,819	278,437	
Kerr McGee	3,000	215,712	234,750	
Marathon Oil	10,000	384,697	435,000	
Standard Oil Indiana	5,100	199,448	221,187	
Texaco	12,000	391,014	294,000	
Union Oil of California	7,000	230,687	322,000	
Total Petroleum		3,185,339	3,291,300	
Goods & Services				
Halliburton	2,000	315,030	284,000	
Schlumberger	4,800	229,190	264,100	
Total Petroleum Services		544,220	548,100	
Total Energy		$3,729,559	$3,839,400	10.4
INDUSTRIAL				
Building				
Georgia Pacific	20,215	$ 662,192	$ 877,069	
Chemicals				
Air Products & Chemicals	5,000	296,325	321,250	
Diamond Shamrock	3,000	148,975	163,500	
Dow Chemical	4,500	280,564	407,250	
Hercules	12,400	370,884	337,900	
Nalco Chemical	15,000	375,145	420,000	
National Starch & Chemical	8,000	324,752	328,000	
Story Chemical	48,500	67,834	181,875	
Total Chemical		1,864,479	2,159,775	

EQUITIES (Continued)

INDUSTRIAL (Continued)	Number of Shares	Book Cost	Market Value	% to Total Market
Electro-Electronic				
AMP	9,700	$ 266,268	$ 264,325	
Anaren Microwave	4,620	15,875	4,620	
Automatic Switch	4,700	275,789	160,975	
Corning Glass	4,000	378,046	154,000	
Fairchild Camera	8,000	463,240	373,000	
General Electric	4,600	107,707	221,375	
Hewlett Packard	1,600	94,315	159,600	
TRW	7,000	167,055	103,750	
Total Electro-Electronic		1,768,295	1,521,645	
Machinery				
Ingersoll Rand	5,100	386,749	355,725	
Signode	5,000	208,993	175,626	
Tecumseh	1,500	76,500	48,000	
Total Machinery		672,242	579,351	
Metals & Mining				
Alcan Aluminium	7,000	242,175	134,750	
Amax	10,000	330,255	490,000	
Colt Industries	10,000	329,040	270,000	
National Standard	5,000	156,890	61,876	
Phelps Dodge	6,000	242,692	189,000	
Total Metals & Mining		1,301,052	1,145,626	
Office Equipment				
IBM	6,725	1,306,068	1,427,380	
Sperry Rand	7,000	250,740	304,500	
Xerox	8,800	796,830	495,000	
Total Office Equipment		2,353,638	2,226,880	
Paper & Container				
Crown Cork & Seal	10,000	233,850	201,250	
International Paper	10,200	439,653	562,277	
St. Regis Paper	10,250	285,355	325,438	
Scott Paper	7,700	116,552	112,613	
Total Paper &Container		1,075,410	1,201,578	
Services				
Gilbert Associates	8,400	251,200	123,900	
Servicemaster Industries	10,200	299,798	247,350	
Unitog	5,000	302,550	102,500	
Total Services		853,548	473,750	
Total Industrial		$10,550,856	$10,185,674	27.7
TOTAL EQUITIES		$27,196,465	$26,357,091	71.5
TOTAL PORTFOLIO		$38,153,614	$36,870,094	

RESEARCH CORPORATION

Form 990-PF, Part V, Question N(1)(c)

Grantee: Donald McMartin, Senior Research Scientist, Laboratories for Veterinary Science, Division of Laboratories and Research, New York State Department of Health, Albany, New York 12201

Date and Amount of Grant: February 28, 1975. $336.00

Purpose: Travel to deliver a scientific paper at the Sixth Annual Meeting of the American Society for Neurochemistry, Mexico City, March 19, 1975 and to discuss with colleagues there subjects to further his research program.

Amounts Expended: $333.68 ($2.32 refunded)

Reports: A scientific and financial report was received on April 1, 1975, which indicated that the grantee diverted no portion of the funds from the purpose of the grant. There is no relationship of the grantee to any foundation manager or substantial contributor of the grantor.

10/31/75
T -4/22/75

RESEARCH CORPORATION

Form 990-PF, Part IV, Question N(1)(c)

Grantee: W. Jean Dodds, Associate Research Scientist, Laboratories for Veterinary Science, Division of Laboratories and Research, New York State Department of Health, Albany, New York 12201

Date and Amount of Grant: June 6, 1975. $449.00

Purpose: Travel to deliver a scientific paper at the Vth Congress of the International Society on Thrombosis and Haemostasis, Paris, July 21 to July 26, 1975 and to participate in an international exchange of biomedical and research progress.

Amounts Expended: $524.00 (Balance paid by grantee)

Reports: A scientific and financial report was received on August 29, 1975, which indicated that the grantee diverted no portion of the funds from the purpose of the grant. There is no relationship of the grantee to any foundation manager or substantial contributor of the grantor.

RESEARCH CORPORATION

VI

Form 990-PF, Part ~~X~~, Question N(1)(c)

Grantee: Oranda H. W. Kao, Senior Research Scientist, Laboratories for Veterinary Science, Division of Laboratories and Research, New York State Department of Health, Albany, New York 12201

Date and Amount of Grant: June 6, 1975. $732.00

Purpose: Travel to deliver a scientific paper at the Symposium on Enzymes and Protein from Thermophilic Microorganisms, Zurich, July 28 to August 1, 1975 and to discuss with colleagues corrent developments in his field of research.

Amounts Expended: $732.00

Reports: A scientific and financial report was received on August 29, 1975, which indicated that the grantee diverted no portion of the funds from the purpose of the grant. There is no relationship of the grantee to any foundation manager or substantial contributor of the grantor.

10/21/75

7 9/16/75

RESEARCH CORPORATION

Form 990-PF, Part V, Question N(1) (c)

Grantee: Julio Espinoza, Instructor in Pediatrics, Department of Nutrition and Food Technology, University of Chile, Casilla 15138, Santiago Chile

Date and Amount of Grant: June 24, 1975. $688.00

Purpose: Travel and per diem for collaboration with Dr. Corcino, University of Puerto Rico, on techniques for measuring absorption rates of nutrients to further his research program at the University of Chile

Amounts Expended: $468.00 (Balance of $220.00 refunded)

Reports: A scientific and financial report dated August 25, 1975 has been received. It indicated that the grantee diverted no portion of the funds from the purpose of the grant. There is no relationship of the grantee to any foundation manager or substantial contributor of the grantor.

RESEARCH CORPORATION

Form 990-PF, Part V, Question N(1)(d)

Grantee: Monterey Institute for Research in Astronomy, Star Route Box 115, Carmel Valley, California 93924

Date and Amount of Grant: October 31, 1974. $76,000.00

Purpose: Construction of a computer-aided telescope for the efficient collection of fundamental data at an independent observatory.

Amounts Expended: $22,910.96 (November 1,1974 - October 1,1975)

Reports: An interim scientific and financial report was received in October 1975 which indicated that the grantee diverted no portion of the funds from the purpose of the grant. Additional reports are expected annually. There is no relationship of the grantee to any foundation manager or substantial contributor of the grantor.

RESEARCH CORPORATION 13-1603407
405 LEXINGTON AVENUE, NEW YORK, NEW YORK 10017

Grants and Contributions Paid and Approved for Future Payment
During the Fiscal Year Ended October 31, 1975

GRANTS PAID YEAR ENDED OCTOBER 31, 1975	Paid During Year	Approved for Future Payment
UNIVERSITY OF AKRON Gerald F. Koser--The synthesis and chemistry of new iodine(III) carbocycles ($8,000 approved 1975; $2,900 payable 10/31/75)	$ 5,100	$ 2,900
AMERICAN ASTRONOMICAL SOCIETY Harlow Shapley Visiting Lectureship in Astronomy	5,000	
AMERICAN FOUNDATION FOR OVERSEAS BLIND Development of a model to predict the extent of xerophthalmia and blindness from vitamin A deficiency in Haiti	11,980	
AMERICAN TYPE CULTURE COLLECTION S. C. Jong--National resource center for living cultures of health-related fungi ($26,666 approved 1975; $11,666 payable 10/31/75)	15,000	11,666
AMHERST COLLEGE P. R. Leadbetter--Microbiological composition of dental plaques	2,500	
UNIVERSITY OF ARIZONA Robert F. Butler--Examination of natural remanent magnetism in playa lake deposits	11,615	
F. Raymond Salemme--X-ray crystallographic studies of redox-coupled enzyme complexes	10,000	
UNIVERSITY OF ARKANSAS Gregory J. Salamo--Subnanosecond and multiple-pulse train self-induced transparency (SIT) with a mode locked dye laser	18,450	
AUBURN UNIVERSITY John L. Aull--Kinetic properties of thymidylate synthetase	8,575	
J. M. Hargis--Synthetic applications of phosphorodiamidites	8,500	
John D. Weete and Olivia Campbell--Regulation of squalene synthetase and 2,3-oxidosqualene-sterol cyclase during sporulation of Rhizopus arrhizus	6,500	
BARNARD COLLEGE, COLUMBIA UNIVERSITY Oakley H. Crawford--Variational methods in scattering theory ($6,666 approved 1975; $3,833 payable 10/31/75)	2,833	3,833
Barry M. Jacobson--Determination of the mechanism of some mild retro-ene reactions	7,000	

BENEDICTINE COLLEGE
Sukh Dev Bassi--Interaction of juvenile hormone and molting hormone with carrier and receptor proteins in the large milkweed bug, Oncopeltus fasciatus
($7,750 approved 1975; $5,750 payable 10/31/75) $ 2,000

Alfred D. Brothers, Jr.--Optical properties of tungsten and molybdenum trioxide thin films
($9,760 approved 1974; $3,000 payable 10/31/75) 3,000

BEREA COLLEGE
Larry K. Blair--Halogen-amine complexes. The structure and properties of the bromine-triethylenediamine complex
($9,600 approved 1974) 4,650

BETHANY NAZARENE COLLEGE
Gene E. Heasley and Victor L. Heasley--Studies on electrophilic additions to unsaturated systems 8,500

BOSTON COLLEGE
Kenneth M. Nicholas--A protecting group for the carbon-carbon double bond 5,000

BOSTON UNIVERSITY
Warren P. Giering--Dihapto cyclobutadiene transition metal complexes 5,700

BOWDOIN COLLEGE
Thomas L. Bohan--Magnetic resonance and optical spectroscopy of heme proteins at low temperatures
($17,500 approved 1973) 5,600

BOWLING GREEN STATE UNIVERSITY
Elliott Blinn--Model systems for metalloenzymes
($3,900 approved 1973) 1,300

BRANDEIS UNIVERSITY
Philip Keehn--The utility of vibrational catalysis by infrared lasers in organic synthesis 5,000

Hermann F. Wellenstein--High energy electron impact spectroscopy of atoms and molecules 13,000

UNIVERSITY OF BRITISH COLUMBIA
Melvin B. Comisarow--Applications of Fourier transform ion cyclotron resonance mass spectroscopy 11,500

Walter N. Hardy--Microwave spectroscopy of molecular solids 14,106

BROOKHAVEN NATIONAL LABORATORY
Peter Schlübelin--Attendance and presentation of paper at Tenth International Encounter, Moriond, France, March 1975 570

	Paid During Year	Approved For Future Payment
BROWN UNIVERSITY		
Kenneth P. Callahan--Complexes involving binary metal anions as ligands	$ 6,000	
BUCKNELL UNIVERSITY		
Russell A. Cormier--Evidence for oxirene intermediates ($6,100 approved 1974)	3,450	
Eugene M. Luks and David Finkel--Non-Abelian cohomology ($10,900 approved 1974)	5,450	
CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA		
Jill P. Adler and Judith S. Kandel--Investigation of fungal human pathogens for virus-like particles	10,210	
CALIFORNIA STATE UNIVERSITY, FULLERTON		
Earl M. Kadish--A study of solvent and substituent effects on the redox properties of transition metal para substituted tetraphenylporphyrins	6,000	
Joseph L. Thomas--New organometallic model systems for nitrogenase	10,000	
CALIFORNIA STATE UNIVERSITY, LOS ANGELES		
Kenneth A. Devor--Studies on the metabolism of integral and peripheral proteins in the cytoplasmic membrane of Escherichia coli	4,000	
CALIFORNIA STATE UNIVERSITY, SAN DIEGO		
Lowell J. Burnett--NMR study of self-diffusion in plastic crystals	7,000	
CALIFORNIA STATE UNIVERSITY, SAN FRANCISCO		
[illegible]relli--Immunologic studies on Candida albicans endotoxin and polysaccharide antigens	3,180	
Edwin L. Motell--Carbon-13 NMR studies of aflatoxins	2,000	
UNIVERSITY OF CALIFORNIA, BERKELEY		
Richard E. Packard--Measurements on ^{3}He at ultralow temperatures	26,000	
Department of Physics	35,000	
James C. Smart--An X-ray crystallographic study of bis(fulvalene)dimetal complexes	1,000	
John S. Winn--Optical spectroscopy of molecular clusters	19,000	
UNIVERSITY OF CALIFORNIA, DAVIS		
Linton R. Corruccini--Liquid He 3 - He 4 solutions under pressure	13,000	
August H. Maki--Study of the excited triplet states of ribonuclease using microwave optical methods	7,000	

	Paid During Year	Approved For Future Payment
UNIVERSITY OF CALIFORNIA, IRVINE		
[illegible] B. Fanning--A study of sequence organization in the DNA of *Drosophila melanogaster* by use of polymethylmethacrylate [illegible]	$10,000	
[illegible] J. Rhee--Template synthesis of enzyme analogs	7,000	
UNIVERSITY OF CALIFORNIA, LOS ANGELES		
[illegible] A. Gladysz--Cage compounds via metal atom synthesis	8,000	
[illegible] J. Heller--New approaches to the semiclassical, quasi-classical and classical molecular collision problems	4,200	
[illegible] working conference: "At Risk Factors in Maternal and Child Nutrition--Practical Approaches," Cairo, Egypt	19,034	
Irina J. Valencich--A trajectory study of alkaline earth reactions with diatomic halogens	4,200	
Gary A. Williams--Hydrodynamics of superfluid ^{3}He and ^{4}He	9,800	
UNIVERSITY OF CALIFORNIA, RIVERSIDE		
Louis J. DeHayes--Electron transfer reactions of vanadium(II) and vanadium(III) complexes	12,090	
Garry W. Scott--Studies of radiationless transitions from specific vibronic levels of the lowest $^1n\pi^*$ states of aromatic ketones and aza-aromatics	14,581	
UNIVERSITY OF CALIFORNIA, SAN DIEGO		
Antonino Catenaro--Evaluation of transfer factor in the therapy of coccidioidomycosis	54,000	
Richard J. Meyer--The construction of hybrid plasmids containing genes involved in nitrogen fixation	13,000	
UNIVERSITY OF CALIFORNIA, SANTA CRUZ		
Jerry F. Feldman--Regulation of tyrosinase synthesis in *Neurospora*	6,000	
Max L. Hanner--Proton transfer reactions in electronically excited states	10,000	
CALVIN COLLEGE		
John B. Van Zytveld--Electronic properties of liquid metals, alloys, and semiconductors ($25,000 approved 1973)	8,500	
CARLETON COLLEGE		
William B. Gleason--Synthesis of amino and deoxy sugars using sodium cyanoborohydride ($9,000 approved 1974)	5,000	

	Paid During Year	Approved For Future Payment
CASE WESTERN RESERVE UNIVERSITY		
Robert F. Kruger--Time-resolved laser-induced paramagnetic resonance	$ 5,900	
John N. Kunnell and Marshall H. Klaus--Have modern health practices removed the safeguard of bacterial interference, shortened breast feeding and increased infant malnutrition? ($80,315 approved 1973-74; $36,555 payable 10/31/75)	66,330	$ 36,555
CATHOLIC UNIVERSITY OF AMERICA		
Robert A. Peters--Non-equilibrium effects in superconductors	11,185	
CATHOLIC UNIVERSITY OF PUERTO RICO		
Gabriel A. Infante--Radiation chemistry and radioprotection of biological important compounds	10,000	
UNIVERSITY OF CHICAGO		
William J. Evans--Investigations into delocalized metal-metal bonding	12,000	
UNIVERSITY OF CHILE		
Abraham Stekel--Field research with iron-fortified milk in infants ($48,950 approved 1974)	21,300	
CHRISTIAN MEDICAL COLLEGE HOSPITAL, VELLORE, INDIA		
Support of nutritional investigations ($39,000 approved 1974; $13,000 payable 10/31/75)	13,000	13,000
CITY COLLEGE OF THE CITY UNIVERSITY OF NEW YORK		
Robert Callender--Resonance Raman studies of rhodopsin	8,500	
Robert H. Kotlowitz--Joseph Warren Barker Fellowship in Engineering	8,000	
John R. Lombardi--Polyatomic molecule electronic spectroscopy with two tunable lasers	13,215	
CLARKSON COLLEGE OF TECHNOLOGY		
John B. McLaughlin--Theoretical studies of the transition to turbulence	5,000	
Curt A. Moyer--Electric and magnetic properties of dilute chromium alloys	2,500	
COLGATE UNIVERSITY		
David K. Lewis--Kinetic and mechanistic studies of unimolecular reactions	6,000	
COLORADO STATE UNIVERSITY		
Larry L. Miller--Organic plasma reactions	1,000	
Kelly R. O'Keefe--Mechanistic investigations of the reactions of picric acid and picric acid analogs with carbonyl compounds of biomedical importance	8,480	

	Paid During Year	Approved For Future Payment
COLORADO STATE UNIVERSITY (continued)		
Thomas W. Sneider--Biochemical mechanisms of eukaryotic DNA modification	$ 5,000	
Stephen Stack--Localization of repetitive DNA in the chromosomes of rye and onion	4,789	
UNIVERSITY OF COLORADO, BOULDER		
David S. Watt--The biosimulated oxidative deamination of amines	5,000	
UNIVERSITY OF COLORADO, COLORADO SPRINGS		
Jerry D. Johnson--Biochemical analysis of histone genes	7,750	
COLUMBIA UNIVERSITY		
Department of Physics	7,500	
CORNELL UNIVERSITY		
Barry K. Carpenter--A new class of 4 + 2 pericyclic reaction	3,485	
Francisco Guillen S.--Studies toward Ph.D. degree in Food Science and Technology ($18,000 approved 1973; $12,000 payable 10/31/75)	6,000	$ 12,000
Paul L. Houston--State-to-state chemical kinetics	17,000	
DRIVERSITY OF DALLAS		
Frank J. Doe--Genetic analysis of the new mating type, h^{-4} in Schizosaccharomyces pombe	4,500	
DARTMOUTH COLLEGE		
Robert Ditchfield--Molecular orbital studies of magnetic shielding anisotropies	7,745	
Richard F. Ellis--Large amplitude ion wave coupling of electron plasma waves	15,150	
Kenneth A. Jones--The effects of defects on the photovoltaic properties of CdS based solar cells	6,050	
Dale E. Mook--High time resolution photometric studies of celestial X-ray sources	10,000	
John Weiner--Chemiluminescence in hyperthermal ion-molecule reactions	5,385	
DAVIDSON COLLEGE		
Merlyn D. Schuh--Intra- and intermolecular energy transfer in vapor phase benzene-biacetyl systems	2,100	
UNIVERSITY OF DELAWARE		
Harvey W. Blanch--Rheology and mass transfer in non-Newtonian fermentation broths	6,000	

	Paid During Year	Approved For Future Payment
DENISON UNIVERSITY		
Kenneth P. Klatt--A study of succinate transport in *Aspergillus flavus*, using mutants deficient in succinate metabolism ($5,960 approved 1974)	$ 2,880	
Michael E. Hickelson--Research in molecular spectroscopy ($17,000 approved 1974)	7,420	
DEPAUL UNIVERSITY		
Anthony F. Reiof--Electrostatic effects on the Chapman transitions in aqueous dispersions of phosphatidylcholines	4,100	
Edwin F. Meyer--Molecular interactions in liquids using gas-liquid chromatography ($4,000 approved 1974)	2,000	
DEPAUW UNIVERSITY		
John H. McFarland--Synthesis and chemistry of furopyridines	4,600	
UNIVERSITY OF DETROIT		
Charles P. Dunne--Regulation of pyridoxal phosphate-dependent enzymes by monovalent cations	10,500	
J. Christopher Philips--Halovinyl sulfur derivatives as allene, ketene and ethylene equivalents	8,000	
DOUGLASS COLLEGE, RUTGERS UNIVERSITY		
John Krenos--The chemical dynamics of collisions involving electronically excited metastable species	16,000	
DRAKE UNIVERSITY		
Don H. Madison--Distorted wave calculation of atomic ionization by charged particle impact ($11,328 approved 1975; $2,775 payable 10/31/75)	8,553	$ 2,775
DUKE UNIVERSITY		
Dewey T. Lawson--A study of propagating modes in superfluid ^{3}He	10,000	
EASTERN NAZARENE COLLEGE		
Lowell H. Hall--Investigation of a molecular connectivity index for correlating and predicting physicochemical properties	400	
EASTERN WASHINGTON STATE COLLEGE		
Daniel R. Lonz--Laboratory investigation of the gravitational inverse square law	3,900	
EMORY UNIVERSITY		
J. H. Goldstein--Expansion of utility of PDP-10 computer by addition of 16K words of core memory	2,500	
Alfred C. Reator, Jr.--A study of vibrational states in nuclei with $32 \leq Z \leq 42$	7,000	

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	Paid During Year	Approved For Future Payment
JULIO ESPINOSA (University of Chile)		
Travel: Consulting with Dr. Jose Corcino at the University of Puerto Rico on techniques for measuring absorption rates of nutrients	$ 688	
FLORIDA TECHNOLOGICAL UNIVERSITY		
Chris A. Clausen--Mössbauer spectroscopic studies of homogeneous catalysts coordinately bound to polymer supports	5,000	
UNIVERSITY OF FLORIDA		
Brian D. Andresen--Lactones from 4-substituted ortho-nitrophenols	3,000	
J. Robert Buchler--Supernova models ($6,000 approved 1975; $3,000 payable 10/31/75)	3,000	$ 3,000
Ben M. Dunn--Protein ligand binding studied by quantitative affinity chromatography	2,200	
Samuel B. Trickey--Lattice dynamics of rare gas crystals from self-consistent energy band wave functions ($9,800 approved 1973)	4,900	
FRANKLIN AND MARSHALL COLLEGE		
Stanley A. Mertzman, Jr.--Age date patterns and isotope geochemistry of the pre-tertiary igneous and metamorphic rocks of northern Central America ($18,250 approved 1973)	3,930	
FURMAN UNIVERSITY		
William C. Harris--Far infrared spectrophotometric work	700	
Noel A. P. Kane-Maguire--Stereoselectivity in electron transfer reactions ($12,700 approved 1974)	4,600	
Lon B. Knight, Jr.--Experimental studies of high temperature species under unusual conditions ($15,602 approved 1975; $4,200 payable 10/31/75)	11,402	4,200
GEORGIA STATE UNIVERSITY		
Hugh R. Miller--The history of the optical variability of quasars, BL Lac objects, and compact galaxies	850	
W. David Wilson--Bifunctional intercalating agents as probes of DNA structure and as potential new drugs	13,000	
UNIVERSITY OF GEORGIA		
Robert F. Nelson--Stopped-flow kinetic studies of cation radical decomposition pathways	8,418	
James R. Y. Rawson--Biological and biophysical characterization of a DNA containing virus in the monocentric fungus Thraustochytrium	8,340	

	Paid During Year	Approved For Future Payment
UNIVERSITY OF GEORGIA (continued)		
Howard W. Ringe--Genetical and physiological control of quinic acid transport in Neurospora crassa	$ 4,000	
Zoltan A. Schelly--Conformational dynamics of biopolymers	6,750	
GRINNELL COLLEGE		
Luther E. Erickson--Nuclear magnetic resonance studies of metal chelates	3,040	
HAMPSHIRE COLLEGE		
Lynn Miller--Mitochondrial nystatin resistant mutants of Saccharomyces cerevisiae	2,800	
HARVARD UNIVERSITY		
Richard H. Kessin--Developmental genetics of a cellular slime mold	9,000	
Ronald H. Levin--The preparation and properties of valuable $(CH)_{12}$ isomers	5,000	
Paul A. Wender--Synthetic studies on dihydropyridines	9,000	
HARVEY MUDD COLLEGE		
Robert Borrelli, Stavros N. Bussenberg and Courtney Coleman--Stability criteria and transient optimization	10,000	
Mitsuru Kubota--Electrophilic reactions of nitric oxides and related small molecules ($8,000 approved 1975; $4,000 payable 10/31/75)	4,000	$ 4,000
Philip C. Myhre--Chemistry of cyclohexadienyl cations ($14,550 approved 1975; $3,000 payable 10/31/75)	11,550	3,000
William H. Sandmann--Millisecond timing of lunar occultations ($18,000 approved 1975; $3,600 payable 10/31/75)	14,400	3,600
Paul van Eikeren--Models for NAD dependent enzymes	3,350	
Gerald R. Van Hecke--Birefringence: comparison of theory and experiment ($6,800 approved 1974)	3,000	
Robert P. Wolf--Ultrasound propagation in solid CH_4 and CD_4 ($9,100 approved 1975; $3,000 payable 10/31/75)	6,100	3,000
HAVERFORD COLLEGE		
Jerry P. Gollub--Light scattering studies of fluid tricritical points and fluid flow instabilities ($12,600 approved 1975; $3,600 payable 10/31/75)	9,000	3,600
HERBERT H. LEHMAN COLLEGE OF CITY UNIVERSITY OF NEW YORK		
Irene S. Leung--Mineral inclusions in natural diamonds and the earth's upper mantle	9,000	

	Paid During Year	Approved For Future Payment
COLLEGE OF THE HOLY CROSS		
James E. Girard--Identification of the sex attractant of the flesh fly Sarcophaga bullata ($10,650 approved 1975; $4,900 payable 10/31/75)	$ 5,750	$ 4,900
HOPE COLLEGE		
John W. Day--Structural and temporal effects of heat shock on synaptonemal complex formation ($8,800 approved 1975; $4,470 payable 10/31/75)	4,330	4,470
Ralph Ockerse--Regulatory and biochemical aspects of peroxidases ($9,140 approved 1974)	4,570	
James W. Toeve--Gamma-ray yields from astrophysical nuclear reactions ($14,665 approved 1975; $5,000 payable 10/31/75)	9,665	5,000
HOUGHTON COLLEGE		
Larry M. Christensen--Novel electrochemical generation of organic intermediates ($7,600 approved 1973)	3,050	
UNIVERSITY OF HOUSTON		
Douglas F. Dyckes--A fragment complementation model for protein folding	8,500	
IDAHO STATE UNIVERSITY		
J. Frank Harmon and E. John Sutter--Magnetic resonance of protons in vitreous water	7,000	
ILLINOIS INSTITUTE OF TECHNOLOGY		
Joel M. Bowman--Quasi-classical reverse studies of the $F + H_2$ and $F + D_2$ reactions	2,500	
Thomas Erber--Study of Čerenkov-magnetobremsstrahlung: Design, construction, and test of counters	15,500	
ILLINOIS STATE UNIVERSITY		
Derek A. McCracken and Matthew J. Nadakavukaren--Physiological and ultrastructural studies of fungal starch biosynthesis ($8,200 approved 1975; $3,800 payable 10/31/75)	4,400	3,800
UNIVERSITY OF ILLINOIS AT CHICAGO CIRCLE		
F. Marion Hulett--Membrane protein-membrane localization and characterization studies	6,000	
UNIVERSITY OF ILLINOIS, URBANA		
Gary B. Schuster--Novel approaches to chemiluminescence. The rational design of light producing chemical systems	9,500	
ILLINOIS WESLEYAN UNIVERSITY		
J. Robert Hippensteele--Control of microvascular blood flow within skeletal muscle tissue	2,185	

	Paid During Year	Approved For Future Payment
INDIANA UNIVERSITY		
Richard M. Jacobson--A total synthesis of perivine	$ 5,350	
Stephen R. Wilson--Experiments directed toward the total synthesis of loline and related pyrrolizidine alkaloids	6,900	
INDIANA UNIVERSITY-PURDUE UNIVERSITY		
Frederick W. Kleinhans and Richard A. Haak--Spin label ESR studies of mammalian nerve fibers	5,900	
Donald J. Niederpruem--Control of polyol metabolism in arthrospores and aecospores of Geotrichum (Endomyces) ($11,200 approved 1974)	5,600	
INSTITUTO DE NUTRICION DE CENTRO AMERICA Y PANAMA		
Luiz G. Elias and Mario Molina--Travel: Participation in the 35th Institute of Food Technologists Meeting, Chicago, June 1975	1,140	
IOWA STATE UNIVERSITY		
Richard C. Larock--Mercury in organic chemistry ($7,680 approved 1975; $2,100 payable 10/31/75)	5,580	$ 2,100
Philip Warner--Are twisted olefins rehybridized?	3,900	
Edward S. Yeung--Laser studies of the time dependent behavior of resonance Raman scattering and resonance fluorescence	7,900	
ITHACA COLLEGE		
Robert F. Pasternack--Kinetic and thermodynamic properties of metalloporphyrins in solution ($8,600 approved 1974)	4,300	
JOHN CARROLL UNIVERSITY		
Max J. Keck--An investigation of the dependence of human visual motion-analyzing mechanisms on the spatial characteristics of simple moving stimuli	8,145	
JOHNS HOPKINS UNIVERSITY		
Paul J. Dagdigian--Molecular beam reactive scattering studies using the laser fluorescence detector	8,500	
Luigi G. Marzilli--Investigation of metals as labels for proteins, particularly histones, in chromatin	5,200	
KALAMAZOO COLLEGE		
Richard J. Cook--A systematic study of the effect of electronegative C-substituents on planar nitrogen inversion in imines ($10,000 approved 1975; $4,000 payable 10/31/75)	6,000	4,000
KANSAS STATE UNIVERSITY		
Alvin D. Compaan--Spectroscopic studies of pure and implanted cuprous oxide using tunable lasers	10,800	

	Paid During Year	Approved For Future
KANSAS STATE UNIVERSITY (continued)		
Lawrence C. Davis--Investigation of nitrogenase component interactions using direct scanning in gel chromatography	$10,000	
Thomas E. Roche--Regulation of liver and brain pyruvate dehydrogenase complex: A new kinetic approach involving a steady state analysis of the phosphorylation-dephosphorylation cycle	6,000	
UNIVERSITY OF KANSAS		
George Boguslawski--Mechanism of conversion in Histoplasma capsulatum ($9,500 approved 1975; $5,750 payable 10/31/75)	3,750	
Grover W. Everett, Jr.--Photoisomerization mechanisms of chiral, transition metal β-diketonate complexes	2,910	
UNIVERSITY OF KANSAS MEDICAL CENTER		
Wilfred N. Arnold--Structure and enzymology in the cell envelopes of pathogenic yeasts	6,838	
KENT STATE UNIVERSITY		
Wilbur N. Franklin--Tests for telemeural interaction with matter	4,088	
UNIVERSITY OF KENTUCKY		
D. Allan Butterfield--ESR studies of erythrocyte membrane structure: Use of myotonic muscular dystrophy as a perturbant of protein-protein and protein-lipid interactions	5,000	
Robert L. Lester--Characterization of the glycosphingolipids of pathogenic fungi ($24,000 approved 1975; $14,500 payable 10/31/75)	9,500	
UNIVERSITY OF KENTUCKY SCHOOL OF MEDICINE		
Ernest W. Chick and Norman L. Goodman--Development of a comprehensive training program in medical mycology ($31,925 approved 1975; $11,925 payable 10/31/75)	20,000	
KING COLLEGE		
Edward W. Burke, Jr.--UBV photometric search for periodic variation of Ap stars ($18,801 approved 1973)	6,267	
LAFAYETTE COLLEGE		
David L. Hogenboom and Mary H. Fehrs--Self-diffusion, viscosity, and molecular motion in liquids and plastic solids at elevated pressures ($22,400 approved 1974)	5,600	
Anthony D. Novaco--A theoretical study of the ground state of adsorbed helium ($3,600 approved 1975; $2,800 payable 10/31/75)	800	

	Paid During Year	Approved For Future Payment
LAWRENCE UNIVERSITY		
Gregory P. Hughes--Temperature dependence of the mean free path length in tin as measured by the radio frequency size effect ($13,085 approved 1974)	$ 3,375	
LEBANON VALLEY COLLEGE		
James N. Spencer--Solvent effects on the hydrogen bond	4,600	
LEWIS UNIVERSITY		
Philip F. Walch--A theoretical study of the electronic properties of actinide compounds ($6,700 approved 1975; $3,600 payable 10/31/75)	3,100	$ 3,600
LOYOLA UNIVERSITY, NEW ORLEANS		
Carl H. Brans and A. R. Marlow--General relativity and foundations of quantum theory ($10,000 approved 1975; $5,000 payable 10/31/75)	5,000	5,000
LUTHER COLLEGE		
Adrian M. Docken--The chemistry of bicyclo(3.3.0)octa-1,5-diene-3,7-dione ($10,400 approved 1975; $5,200 payable 10/31/75)	5,200	5,200
MANHATTAN COLLEGE		
Ulrich Naf--On the chemistry and mode of action of a structurally new type of plant hormone ($11,800 approved 1975; $5,100 payable 10/31/75)	6,700	5,100
MARIETTA COLLEGE		
Robert G. Walker and Paul L. Anderson--Developmental patterns of ganglioside synthesis in chick brain ($13,500 approved 1974)	4,500	
MARQUETTE UNIVERSITY		
Jarry H. Smith--The role of Tyr-248 in carboxypeptidase A catalysis	4,100	
UNIVERSITY OF MARYLAND, BALTIMORE COUNTY		
Robert G. Little--The role of distal residues in hemo proteins ($8,360 approved 1975; $3,040 payable 10/31/75)	5,320	3,040
UNIVERSITY OF MARYLAND, COLLEGE PARK		
George A. Bean--Evaluation of nystatin as a control procedure for Dutch elm disease	11,662	
MARYVILLE COLLEGE		
W. Gale Rhodes--Primitive transmembrane transport and noheme iron redox activities among thermal polymers of amino acids ($10,860 approved 1974)	4,100	
MASSACHUSETTS INSTITUTE OF TECHNOLOGY		
Michael S. Feld--Novel aspects of laser-induced line narrowing effects in coupled Doppler-broadened transitions	10,000	

	Paid During Year	Approved For Future Payment
MASSACHUSETTS INSTITUTE OF TECHNOLOGY (continued)		
Ellen J. Henderson--Mechanism of a developmentally-regulated, membrane-bound cyclic-AMP receptor	$ 8,000	
Edward I. Solomon--Spectroscopic studies of photochemically important transition metal excited states	18,000	
SAMUEL P. MASSIE (U.S. Naval Academy) A documentary history of black scientists	2,000	
MERRIMACK COLLEGE Barton S. Solomon--Fluorescence quenching and the photophysics of retinene ($10,260 approved 1972)	3,420	
UNIVERSITY OF MIAMI Thomas J. Herbert--Laser intensity fluctuation spectroscopy: A probe of the cytoplasmic contractile process in individual living cells	13,000	
MICHIGAN STATE UNIVERSITY Priscilla J. Colwell--Ultraviolet Raman scattering study of ion-implanted silicon carbide	7,000	
Arnold Revzin--Interactions of regulatory proteins with DNA	12,740	
William Tai--A cytogenetic investigation of the Alaskan intergeneric hybrid X Agrohordeum pilosilemma Mitchell & Hodgson	4,600	
UNIVERSITY OF MICHIGAN-DEARBORN Paul W. Zitzewitz--An investigation of the polarization of slow positrons	12,520	
UNIVERSITY OF MICHIGAN MEDICAL CENTER Henry E. Jones--Host resistance mechanism in the cutaneous mycoses	33,077	
MIDLAND LUTHERAN COLLEGE Ronald A. Backer--Nitrogen fixation in perennial legumes: effect of age, phenology, substrate nitrogen levels and C/N ratios	5,300	
UNIVERSITY OF MINNESOTA, ST. PAUL Carol S. Davos--Regulation of dikaryosis in Schizophyllum commune	9,000	
Ronald L. Phillips--Classical and molecular cytogenetic approaches to increased protein in oats	4,500	
MISSISSIPPI COLLEGE John W. Long--Reactions of alcohols over thorium oxide catalysts	1,900	

	Paid During Year	Approved for Future Payment
MONTANA STATE UNIVERSITY		
Jim E. Cutler--Leukocyte chemotaxis induced by Candida albicans	$ 5,700	
MOUNT HOLYOKE COLLEGE		
Howard W. Nicholson, Jr.--$K^- p \rightarrow \tilde{K}^0 n$ total and differential cross sections between .5 and 1.0 GeV/c	4,690	
NASSAU COMMUNITY COLLEGE		
John L. Reno--Continuation of study, in collaboration with Alan A. Johnson of the University of Louisville, of the origin of meteorites	3,500	
NATIONAL ACADEMY OF SCIENCES		
John T. Middleton--Frederick Gardner Cottrell Award for Environmental Quality	5,000	$ 10,000
NATIONAL CONSORTIUM FOR BLACK PROFESSIONAL DEVELOPMENT		
Symposium of black scientists and career development	8,819	
UNIVERSITY OF NEBRASKA		
Christopher J. Michejda--Alkylation of genetic materials by nitrosamines	5,600	
UNIVERSITY OF NEVADA		
John H. Nelson--Catalysis and metallation reactions of ruthenium complexes of benzyl phosphines	2,200	
NEW COLLEGE		
Peter A. Kazaks--Theoretical investigation of pion nucleon interactions in pi-nucleus reactions using absorption model wave function	3,800	
UNIVERSITY OF NEW HAMPSHIRE		
John J. Wright--Laser spectroscopy	4,000	
NEW YORK STATE DEPARTMENT OF HEALTH, DIVISION OF LABORATORIES AND RESEARCH		
M. Jean Dodds--Vth Congress of the International Society on Thrombosis and Haemostasis, Paris, France	449	
Health Research, Inc.--Evaluation of isoflavonoid phytoalexins and their derivatives as therapeutic agents in human mycoses	22,386	
Oranda H. W. Kao--Symposium on Enzymes and Protein from Thermophilic Microorganisms, Zurich, Switzerland	732	
Donald N. McMartin--Sixth Annual Meeting of the American Society for Neurochemistry, Mexico City	330	
G-Yull Rhee--Sixth International Symposium on Continuous Culture of Microorganisms, Oxford, England	626	

	Paid During Year	Approved For Future Payment
STATE UNIVERSITY OF NEW YORK AT BINGHAMTON		
James H. Constable--A study of energy transport across boundaries of dielectric crystals	$10,900	
STATE UNIVERSITY OF NEW YORK AT BUFFALO		
Francis M. Gasparini--Finite size and surface effects on the specific heat of ^{4}He at the λ transition	8,000	
John T. Ho--Mesomorphic transition properties of liquid crystals	11,242	
STATE UNIVERSITY OF NEW YORK COLLEGE OF ENVIRONMENTAL SCIENCE AND FORESTRY		
Gideon Levin--Effect of solvent and cations on the rate of disproportionation of radical ions	7,400	
STATE UNIVERSITY OF NEW YORK COLLEGE AT FREDONIA		
George O. Evans, II--The catalytic fixation of carbon dioxide with transition metal hydrides ($8,000 approved 1975; $900 payable 10/31/75)	7,100	$ 900
STATE UNIVERSITY OF NEW YORK COLLEGE AT GENESEO		
Francis T. Wang--The chemistry of metal coordinated nitrene	2,500	
STATE UNIVERSITY OF NEW YORK AT STONY BROOK		
Jimmie D. Doll--Statistical theory of gas/solid-surface collisions	6,135	
Alan B. Levy--New approaches to the stereospecific synthesis of olefins via organoboranes	6,000	
Harold J. Metcalf--Background-free molecular spectroscopy using two photon excitation	7,090	
NEW YORK UNIVERSITY		
David I. Schuster--Use of fluorescence to correlate structure and reactivity in the photochemistry of β,γ-unsaturated ketones	5,800	
NORTH CAROLINA STATE UNIVERSITY		
A. F. Schreiner--Laser magnetic circular luminescence of molecular substances containing biochemically important metal-sulfur and other bonds	10,500	
UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL		
Barry R. Lentz--Relationships between composition, structure, and function in artificial and natural membranes	5,000	
UNIVERSITY OF NORTH CAROLINA, GREENSBORO		
James F. Wilson--Characterization of an infective agent in Neurospora crassa ($30,000 approved 1975; $15,000 payable 10/31/75)	15,000	15,000
UNIVERSITY OF NORTH CAROLINA, WILMINGTON		
Ned H. Martin--Biosynthetic studies of some isoquinoline alkaloids	6,500	

NORTH DAKOTA STATE UNIVERSITY

Mark S. Gordon--Development of an INDO molecular orbital method applicable to the second row of the periodic table

S. S. Maan--I. Evaluation of cytoplasmic variability introduced into Triticum durum from related species of Triticum, Aegilops, and Secale. II. Characterization of an alien chromosome causing gametophytic male and female sterility in wheat

NORTHEASTERN UNIVERSITY

William M. Reiff--Electronic structure the metal ion and oxygen in some synthetic models for the prosthetic group of oxy- and deoxyhemoglobin

NORTHERN ILLINOIS UNIVERSITY

J. Thomas Knudtson--Laser energy transfer studies in molecules with chemically significant amounts (20 to 60 Kcal/mole) of vibrational energy 14,000

Thomas D. Rossing--Sound production in musical instruments 8,000

NORTHLAND COLLEGE

Gary P. Wulfsberg--^{35}Cl NQR as a means of distinguishing inter- and intramolecular coordination in chlorinated organometallic compounds 5,100

NORTHWESTERN UNIVERSITY

Richard T. Arnold--Cyclic transition states -- A novel synthesis of polyunsaturated acids 1,000

UNIVERSITY OF NOTRE DAME

Xavier Creary--Synthesis and reactivity of methylene cyclopropene 6,000

Jay A. Labinger--Redox behavior of transition metal oxygen complexes: Generation of reactive oxygenation reagents 6,000

OAKLAND UNIVERSITY

Kenneth Harmon--Studies on closed polyhedral molecule-anion complex species 1,600

Christine S. Sloane--Molecular dissociation: The ethyl radical 6,000

OBERLIN COLLEGE

Robert C. Hilborn--Studies of atomic and molecular excited states using pulsed tunable dye lasers ($13,395 approved 1974) 3,600

David H. Miller--The chemical and ultrastructural development of the cell wall of the green alga, Chlorococcum oleofaciens ($11,100 approved 1974) 5,100

	Paid During Year	Approved For Future Payment
OCCIDENTAL COLLEGE		
Ralph L. Amey--Dielectric aspects of biological materials by time domain spectroscopy ($13,600 approved 1974)	$ 3,500	
Frank P. DeHaan--Mechanisms of electrophilic aromatic substitution reactions	14,300	
OHIO NORTHERN UNIVERSITY		
David W. Kurtz--Ring size effects in cycloalkenone photorearrangements ($9,140 approved 1974)	4,300	
OHIO STATE UNIVERSITY		
Richard L. McCreery--Electrochemical and spectroscopic investigation of brain redox compounds and related drugs	6,600	
OREGON STATE UNIVERSITY		
Kenneth S. Krane--Angular correlation studies in nuclear and solid state physics	6,400	
OTTERBEIN COLLEGE		
Philip E. Barnhart--Chromospheric line structure measurement ($7,700 approved 1975; $4,400 payable 10/31/75)	3,300	$ 4,400
PACIFIC LUTHERAN UNIVERSITY		
John L. Main--The properties of mechanisms involved in the ecotypic differentiation of Agropyron spicatum ($8,750 approved 1974)	4,150	
Richard F. McGinnis--Systematic and ecologic studies of southern ocean lanternfishes (family Myctophidae) ($9,000 approved 1975; $4,050 payable 10/31/75)	4,950	4,050
UNIVERSITY OF THE PACIFIC		
Michael J. Minch--Molecular association in aqueous solution	2,018	
Carl E. Wulfman--Some aspects of the group structure of atomic and molecular physics ($20,000 approved 1975; $9,500 payable 10/31/75)	10,500	9,500
PAN AMERICAN HEALTH AND EDUCATION FOUNDATION		
Caribbean Food and Nutrition Institute--Training and applied research ($1,167,550 approved 1966, 1970-73, 1975; $62,085 payable 10/31/75)	170,975	62,085
Leonardo J. Mata--Interactions between viral infection, immunity and malnutrition ($35,000 approved 1974-75; $10,550 payable 10/31/75)	13,475	10,550
Nutrition research and education in Haiti ($568,394 approved 1964-68, 1971-72; $21,134 payable 10/31/75)	13,200	21,134

	Paid During Year	Approved For Future Payment
[illegible] HEALTH AND EDUCATION FOUNDATION (continued)		
[illegible] research and graduate training in food science and practical animal nutrition at the Institute of Nutrition of Central America and Panama ($8,125,296 approved 1971, 1974; $443,363 payable 10/31/75)	$310,000	$ 443,363
[illegible] G. Batres and J. R. Aguilar--Nutrition Education and Rehabilitation Centers ($232,614 approved 1965-67, 1971, 1974; $1,380 payable 10/31/75)	15,150	1,380
PENNSYLVANIA STATE UNIVERSITY		
George W. Gokel--Electrochemical synthesis of heteromacrocycles	8,271	
UNIVERSITY OF PENNSYLVANIA		
Larry G. Sneddon--Studies in organometallic and metallo-boron chemistry	8,000	
ECOLE POLYTECHNIQUE, MONTREAL		
Arthur D. Pelton--Fabrication of β-alumina and its uses in the measurement of thermodynamic properties at elevated temperatures	5,000	
POMONA COLLEGE		
Wayne E. Steinmetz--The application of low resolution microwave spectroscopy to conformational analysis	2,800	
PORTLAND STATE UNIVERSITY		
Edward M. Perdue--The state of aggregation of humic substances in natural waters	4,900	
PRINCETON UNIVERSITY		
Steven L. Bernasek--Studies of the heterogeneously catalyzed mechanism of the methanation reaction on well characterized Co and Mo single crystal surfaces	12,000	
UNIVERSITY OF PUERTO RICO		
Jose J. Corsino--Control of deficiency diseases related to malabsorption ($61,380 approved 1973)	14,000	
PURDUE UNIVERSITY		
Steven Adelman--Many body collision theory for large molecules and solid surfaces	5,900	
Jack E. Dixon--The mechanism of biosynthesis and degradation of thyrotropin releasing hormone	9,125	
David R. McMillin--Preparation and photostudies of transition metal complexes with low lying charge transfer states	7,500	
Thomas J. Moffett--Investigation of rapid optical variability in stars ($12,300 approved 1975; $1,725 payable 10/31/75)	10,575	1,725

	Paid During Year	Approved for Future Payment
PURDUE UNIVERSITY (continued)		
Alvin A. Solheim--Tensile creep of hypostoichiometric UO_2	$ 8,000	
QUEENS COLLEGE		
Radio astronomy at frequencies in the range of 1 megacycle ($12,500 approved 1971, 1973; $7,249 payable 10/31/75)	68	$ 7,249
UNIVERSITY OF REDLANDS		
Richard F. Carlson and Demetrius J. Margaziotis--Total proton reaction studies above 10 MeV	3,000	
Aaron J. Cox, Jr. and Richard F. Carlson--Proton total cross section and total reaction cross section measurements for light nuclei between 150 and 550 MeV ($24,310 approved 1975; $8,800 payable 10/31/75)	15,510	8,800
REED COLLEGE		
Bert G. Brehm--Flavonoid localization and ultraviolet patterning in flower petals	7,000	
RENSSELAER POLYTECHNIC INSTITUTE		
Joseph T. Warden--An electron spin resonance investigation of the role of b-type cytochromes in photosynthetic electron transport	8,500	
UNIVERSITY OF RICHMOND		
Stuart C. Clough--Fragmentation of nitrogen heterocyclics ($10,100 approved 1974)	4,300	
Richard W. Topham--The physiological significance and chemical composition of ferroxidase-II ($11,400 approved 1975; $4,800 payable 10/31/75)	6,600	4,800
RIDER COLLEGE		
Mervin Kontrovitz--The differential transportation of foraminifera and paleoecological applications	5,278	
ROCHESTER INSTITUTE OF TECHNOLOGY		
David A. Hilborn--A molecular and biological characterization of the fava bean lectin	8,000	
Ronald E. Merrill--Borate anion-assisted cyclization reactions	2,250	
UNIVERSITY OF ROCHESTER		
Frederick A. Klinstein--Role of coliform enterotoxins in the pathogenesis of tropical malabsorption ($118,713 approved 1974; $30,000 payable 10/31/75)	30,613	30,000
THE ROCKEFELLER UNIVERSITY		
Edward L. Tatum and William A. Scott--Biochemistry of morphogenesis in the mold Neurospora ($46,800 approved 1974)	17,400	
ROLLINS COLLEGE		
Erich C. Blossey--Study of biochemical polymer reagents	4,570	

	Paid During Year	Approved For Future Payment
RUTGERS UNIVERSITY		
Norris Kolaterovsky--Immunogenicity of ribosomes from Candida albicans ($14,200 approved 1974)	$ 7,100	
ST. FRANCIS XAVIER UNIVERSITY, NOVA SCOTIA		
Michael Steinitz--Magnetic properties of metals and Hall Effect measurements in solid ionic conductors at high temperatures	5,000	
ST. JOHN'S UNIVERSITY, MINNESOTA		
Michael J. Collins--Calorimetric investigation of the interaction of some lanthanide shift compounds with selected bases	3,370	
ST. JOSEPH'S COLLEGE, PENNSYLVANIA		
John G. Barberian--The dielectric relaxation of supercooled liquids ($17,120 approved 1975; $2,120 payable 10/31/75)	15,000	$ 2,120
ST. LOUIS UNIVERSITY		
James H. Barker--A systematic study of stopping power correction factors used in Doppler shift lifetime measurements	10,000	
ST. MARY'S COLLEGE, MINNESOTA		
Richard V. Kowles--Biological control of insect pest populations through the synthesis and use of two-chromosome double interchange strains ($13,800 approved 1973)	4,150	
FUNDACION SAN GABRIEL, BOLIVIA		
Liesselotte de Barragan--Nutritional rehabilitation of malnourished children through maternal education	1,931	
HOSPITAL SANTA BARBARA, BOLIVIA		
Antonio R. Pardo--Endemic goiter in Bolivia	1,000	
SMITH COLLEGE		
Michael O. Albertson--Boundary colorations ($7,200 approved 1974)	3,600	
SOCIEDAD LATINOAMERICANA DE NUTRICION		
Administrative reorganization of SLAN	2,000	
Travel of Latin American nutritionists to Xth International Congress of Nutrition, Kyoto	28,000	
SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS		
Institute for Mathematics and Society--Statistics and environmental factors in health	7,500	
UNIVERSITY OF SOUTH CAROLINA		
Thomas A. Bryson--Stereospecific carbocyclic ring formation via alkylboranes, synthesis of eudesmanes	861	

	Paid During Year	Approved For Future Payment
UNIVERSITY OF SOUTH CAROLINA (continued)		
Philip E. Mirkes--The role of masked messenger ribonucleic acid in the germination of Neurospora crassa spores	$ 6,090	
UNIVERSITY OF SOUTH FLORIDA		
Milton D. Johnston, Jr.--Methods for the application of lanthanide-induced shifts to the study of molecular structure in the liquid state	4,000	
SOUTHERN ILLINOIS UNIVERSITY		
Ram P. Tewari--Ribosomes and ribosomal protein from Histoplasma capsulatum as skin and serological test antigens	15,000	
SOUTHWEST TEXAS STATE UNIVERSITY		
Caroline P. Benjamin and James R. Crawford--Holographic interferometric observation of the electrical response of bone	3,000	
SOUTHWESTERN AT MEMPHIS		
Robert G. Mortimer--Nonequilibrium processes in liquids	8,000	
STANFORD UNIVERSITY		
Michael D. Fayer--Energy migration in molecular solids: Coherent vs. incoherent propagation effects in long range energy transport	7,800	
Wray H. Huestis--Active site chemistry of human erythrocyte neurotransmitter receptors	7,000	
John A. Lipa and Robin P. Giffard--Measurements on superfluid helium-3 (JAL). Research into fundamental sensitivity limitations of rf-biased superconducting magnetometers (RPG)	10,000	
SWARTHMORE COLLEGE		
Dwight A. Sweigart--Kinetics and mechanism of the substitution reactions of five-coordinate transition metal complexes ($8,000 approved 1975; $4,000 payable 10/31/75)	4,000	$ 4,000
SYRACUSE UNIVERSITY		
Laurence A. Nafie--Vibrational optical activity	15,000	
William H. Woodruff--Mechanistic applications of resonance-enhanced Raman spectroscopy	19,850	
TEMPLE UNIVERSITY HEALTH SCIENCES CENTER		
Fritz Blank--Research training grant in medical mycology ($51,050 approved 1975; $25,050 payable 10/31/75)	26,000	25,050
UNIVERSITY OF TENNESSEE		
James L. Adcock--The fluorine sensitized oxidation of hydrocarbons	9,600	
TEXAS A&M UNIVERSITY		
Edward S. Fry--An experimental test of local hidden variable theories	3,800	

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TEXAS A&M UNIVERSITY (continued)		
U. R. Murty--Cytogenetic studies of apomixis in grain sorghum	$15,000	
Michael P. Rosynek--Infrared spectra of adsorbed species on rare earth oxide surfaces	5,500	
TEXAS CHRISTIAN UNIVERSITY		
Welda LaJean--Macromolecular synthesis during cell cycle and morphogenesis in Candida albicans	10,000	
UNIVERSITY OF TEXAS AT AUSTIN		
J. Robert Gray (transferred to Frederick C. Seaman)--Biochemical profiles in cotton	12,000	
Stephen F. Martin--A new approach to geminal alkylation: Carbonyl homologation with α-substitution	5,000	
THOMAS MORE COLLEGE		
Robert K. Boggess--The stabilization of low oxidation states of iron and cobalt	3,300	
UNIVERSITY OF TOLEDO		
Bernard W. Bopp--Spectroscopy of flare stars	3,000	
James E. Gano--Ninety degree twisted alkenes	7,050	
Henry J. Simon--Optical harmonic generation with surface plasmons in metal films	8,950	
UNIVERSITY OF TORONTO		
Geraldine Anne Kenney-Wallace--On the origin of spectral broadening of solvated electron absorption bands, employing intracavity laser saturation techniques	12,600	
TRINITY CHRISTIAN COLLEGE		
Harry Cook--Endocrinological processes connected with parental behavior and the thyroid gland in fishes ($9,160 approved 1974)	4,280	
TRINITY COLLEGE, CONNECTICUT		
Henry A. DePhillips, Jr.--The effects of ligand binding on the subunit structure of hemocyanin ($13,900 approved 1974)	5,500	
Harvey S. Picker--Theoretical studies of the proton-proton reaction in stellar interiors ($5,000 approved 1974)	2,000	
TRINITY UNIVERSITY		
Jesse W. Schilling--Studies on the crystal forms of enzymes ($9,868 approved 1974)	2,684	
UNIVERSITY OF TULSA		
Marion E. Woolsey--Studies on presumed ocular histoplasmosis	6,800	

	Paid During Year	Approved For Future Payment
UTAH STATE UNIVERSITY		
Karen W. Morse--Synthesis and reduction and catalytic behavior of (phosphine-transition metal-tetrahydroborate/substituted tetrahydroborate) complexes	$ 2,000	
VANDERBILT UNIVERSITY		
Larry R. Dalton--New techniques for the study of molecular dynamics	11,000	
Charles M. Lukehart--The synthesis of highly reactive carbenoid complexes	5,000	
W. Clark Still--Alkoxycarbanions in organic synthesis	7,250	
VASSAR COLLEGE		
Curt W. Beck--Chemistry, botany and archaeology of amber ($15,000 approved 1974; $5,000 payable 10/31/75)	5,000	$ 5,000
Steven P. Hopper--Organoboron compounds as sources of silaethylene intermediates ($8,185 approved 1975; $3,365 payable 10/31/75)	4,820	3,365
INSTITUTO VENEZOLANO DE INVESTIGACIONES CIENTIFICAS		
Continuation of research on iron absorption from food	5,000	
UNIVERSITY OF VERMONT		
Jane M. Saver--Mechanisms of reactions of the flavin analogues, 5-(arylimino)barbituric acids	7,985	
VIRGINIA COMMONWEALTH UNIVERSITY		
Jerry W. King--Solvent extraction and chemical purification studies using dense gases	8,152	
H. Jean Shadomy--The significance of nonencapsulated strains of Cryptococcus neoformans	387	
Smith Shadomy--Uptake and metabolism of 5-fluorocytosine by Aspergillus fumigatus ($10,000 approved 1974)	4,400	
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY		
T. C. Campbell--Nutritional effects on aflatoxin metabolism	5,000	
Eugene M. Gregory--Interaction of superoxide radical with biomolecules	2,955	
Donald R. Lightfoot--Information residing in folding structures of viral RNAs of eucaryotes	13,000	
Charles L. Rutherford--Application of ultra-microtechniques to follow cell specific events occurring during differentiation in Dictyostelium discoideum	12,730	

	Paid During Year	Approved for Future Payment
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY (continued)		
Hampton D. Smith, Jr.--Dinitrogen and dioxygen activation by, and metal-metal polymers derived from, transition metal-carborane complexes	$ 4,000	
Ryland E. Webb--Nutrition research and education in Haiti ($228,342 approved 1964-72)	4,190	
UNIVERSITY OF VIRGINIA		
Paul N. Fishbane and James S. Trefil--Experimental and theoretical properties of high energy composite systems ($4,000 approved 1974)	3,000	
Ekkehard Sinn--Rapid response ultra-high accuracy magnetic measurements	14,220	
WABASH COLLEGE		
Austin E. Brooks--The effect of optical brighteners on green algal fine structure ($7,500 approved 1974)	2,500	
Ronald S. Lenox--The stereoselective synthesis of olefins from unsaturated cyclic sulfones. The reaction of diphenylsulfonium ylides with carbonyl compounds ($10,600 approved 1973)	3,320	
WAKE FOREST UNIVERSITY		
Ronald L. Blankespoor--Electrocyclic reactions and spin density distributions of radical anions containing fused, strained rings ($9,850 approved 1974)	3,850	
William C. Kerr--Theoretical study of the dynamics of structural phase transitions ($7,000 approved 1975; $2,775 payable 10/31/75)	4,225	$ 2,775
WASHINGTON STATE UNIVERSITY		
Rodney Croteau--Biosynthesis and metabolism of monoterpenes	6,500	
Robert C. Ronald--A stereoselective synthesis of laurinterol	5,000	
Baldev K. Vig--Study of somatic crossing over and related processes in Glycine max (L.) Merrill (soybean)	6,000	
WASHINGTON UNIVERSITY SCHOOL OF MEDICINE		
George S. Kobayashi and Gerald Medoff--Training grant in medical mycology ($26,250 approved 1975; $21,000 payable 10/31/75)	5,250	21,000
UNIVERSITY OF WASHINGTON		
L. S. Brown, D. G. Boulware and R. N. Cahn--Summer Institute for Theoretical Physics, 1975	10,000	
Edward F. Haskins--High voltage and transmission electron microscopical study of nuclear division in Echinostelium minutum	4,300	

	Paid During Year	Approved For Future Payment
UNIVERSITY OF WASHINGTON (continued)		
Visiting Physics Professorship: Sir Rudolf Peierls	$ 6,800	
WAYNE STATE UNIVERSITY		
Rondo N. Jeffery--Positron annihilation studies of vacancy formation volumes in metals	10,385	
William E. Timberlake--The relationship of glutarimide antibiotic structure to biochemical activity ($8,000 approved 1975; $3,500 payable 10/31/75)	4,500	$ 3,500
WELLESLEY COLLEGE		
David R. Dobbins--Effects of physical pressure and chemical regulation on the polarity of cell division	9,650	
WESLEYAN UNIVERSITY		
Thomas J. Morgan--Collisions of fast ions and atoms with metal vapors	11,630	
Robert J. Rollefson--NMR study of an adsorbed gas system	8,900	
WEST VIRGINIA UNIVERSITY		
Gerald W. Stewart--A study of ion-molecule reactions using ion cyclotron resonance spectrometry	8,600	
UNIVERSITY OF WESTERN ONTARIO		
Robert M. Cory--The base-catalyzed decomposition of bisnitrosamidomethanes: A possible synthesis of bisdiazomethane	4,814	
WHEATON COLLEGE, ILLINOIS		
Pattie P. T. Pun--A study of mutation rate in the immunoglobulin variable region	3,720	
WHEATON COLLEGE, MASSACHUSETTS		
Bojan H. Jennings--Synthesis of compounds designed to inhibit the biosynthesis of estrogens	14,923	
John C. Kricher--A laboratory study of the effects of selected pesticides and polychlorinated biphenyls on aquatic microecosystems	2,717	
WICHITA STATE UNIVERSITY		
Gary Simons--Alternative analysis of molecular vibrations and molecular force fields	3,400	
COLLEGE OF WILLIAM AND MARY		
John B. Delos--Theoretical studies of chemical reactions involving negative ions ($4,800 approved 1975; $2,400 payable 10/31/75)	2,400	2,400
WILLIAMS COLLEGE		
Stuart B. Crampton--Atomic hydrogen collisions with paramagnetic gases in a hydrogen maser ($10,000 approved 1975; $5,000 payable 10/31/75)	5,000	5,000

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UNIVERSITY OF WISCONSIN-MADISON		
Frederick W. Benz--Application of pulsed NMR techniques in studies on the unfolding of proteins	$ 3,650	
Marvin E. Ebel and Emmanuel A. Paschos--Weak interactions at high energies	4,200	
ROBIN A. WOODS (Sheffield University, England) Participation in seminar of the Division of Medical Mycology of the A.S.M. on "Mechanism of Action of Antifungal Antibiotics"	146	
COLLEGE OF WOOSTER		
Charles L. Borders, Jr.--The role of aromatic residues in creatine kinase activity	8,350	
YALE UNIVERSITY		
Ian M. Armitage--Application of ^{13}C and ^{31}P magnetic resonance techniques to elucidation of macromolecular structure	8,500	
James E. Bayfield--Atomic structure in intense electromagnetic fields	14,970	
Kenneth B. Jordan--Negative ion reactions	4,000	
Roy A. Schroeder--Precise determination of amino acid racemization kinetics in the proteinaceous component of skeletal fossils ($16,000 approved 1975; $3,500 payable 10/31/75)	12,500	[illegible]
Harve S. Waff--A study of the nature of wetting of crustal and upper mantle minerals by magmatic liquids	13,900	
YORK COLLEGE OF CITY UNIVERSITY OF NEW YORK		
Lawrence W. Johnson--Electric field effects on oriented porpnyrin molecules	9,000	
YORK UNIVERSITY, ONTARIO		
Dennis V. Stynes--Photochemical aspects of heme models	7,000	
SPECIAL PROGRAMS		
Conferences	9,166	
Other Programs	2,295	
MISCELLANEOUS GRANTS	4,471	3,000
GRANTS REFUNDED	(69,967)	
TOTAL GRANTS PAID	$3,233,262	

	Paid During Year	Approved For Future Payment
UNIVERSITY OF ARIZONA MEDICAL CENTER		
David Rifkind--Studies on the transfer of cell-mediated immunity to Coccidioides immitis		$ 14,000
UNIVERSITY OF CALIFORNIA, RIVERSIDE		
Harcharan Singh Dhaliwal--Cytogenic studies of T. boeoticum--T. urartu amphiploids and their crosses with tetraploid wheats--aimed at gene retrieval from wild gene pool.		11,000
CARLETON COLLEGE		
James E. Finholt--The preparation of chromium (III) compounds as single crystals suitable for diffraction studies ($7,720 approved 1974; $3,860 payable 10/31/75)		3,860
CENTRAL UNIVERSITY OF IOWA		
Paul J. Ogren--Oxygen configurations and complex stabilities in aluminum halide-cyclic ether complexes ($14,500 approved 1973; $3,100 payable 10/31/75)		3,100
DUKE UNIVERSITY		
Paul L. Bolen--Exploration and application of techniques that would allow the identification and characterization of protein differences that may occur in organelles isolated from diverse cytoplasms of Zea mays L.		10,500
UNIVERSITY OF FLORIDA		
Michael Parkinson--Investigations into massless particle decay processes ($9,100 approves 1974; $4,550 payable 10/31/75)		4,550
HOPE COLLEGE		
David Harker--Analytic approximation theory-analysis of nucleon-nucleon scattering data ($9,000 approved 1973;$4,500 payable 10/31/75)		4,500
ITHACA COLLEGE		
Heinz F. Koch--Mechanisms of elimination reactions ($12,200 approved 1974; $6,100 payable 10/31/75)		6,100
LAKE FOREST COLLEGE		
Aaron J. Owens--Theoretical studies of cosmic-ray production and propagation ($8,000 approved 1974; $4,000 payable 10/31/75)		4,000
LINFIELD COLLEGE		
Brannan C. Hamby--An investigation of selected electrochemical properties of certain graphite salts and intercalation compounds ($10,550 approved 1974; $3,000 payable 10/31/75)		3,000
MIDDLEBURY COLLEGE		
Robert W. Gleason--The lithium aluminum hydride reduction of N-n trosodibenzylamines ($5,650 approved 1973; $2,825 payable 10/31/75)		2,825

	Paid During Year	Approved For Future Payment
MOUNT HOLYOKE COLLEGE		
Sue E. Gruber and Peter J. Gruber--Studies on the glycolate pathway in green algae ($16,250 approved 1974; $4,000 payable 10/31/75)		$ 4,000
NEW YORK STATE DEPARTMENT OF HEALTH - DIVISION OF LABORATORIES AND RESEARCH		
Ira F. Salkin and David H. Griffin--Mechanisms of fungal resistance to cycloheximide ($21,600 approved 1974; $3,600 payable 10/31/75)		3,600
OBERLIN COLLEGE		
Norman C. Craig and Martin N. Ackermann--Vibrational spectros copy of azo and cyclopropanyl systems ($32,000 approved 1974; $3,500 payable 10/31/75)		3,500
PURDUE UNIVERSITY		
Charles E. Bracker--Vacuolation, aging and protoplasmic development in fungi ($30,488 approved 1974; $12,436 payable 10/31/75)		12,436
UNIVERSITY OF THE WEST INDIES		
David Picou--Support for the M.Sc. (nutrition) program ($46,077 approved 1973; $21,326 payable 10/31/75)		21,326
WORKING CONFERENCE ON MOTHERCRAFT CENTERS		
($40,000 approved 1969, 1971; $1,126 payable 10/31/75)		1,126
TOTAL GRANTS PAID and APPROVED	$3,233,262	$1,026,133

RESEARCH CORPORATION 13-1963407
405 Lexington Avenue, New York, N. Y. 10017
FORM 990PF - PAGE 5 - PART VII
CAPITAL GAINS AND LOSSES FOR TAX ON INVESTMENT INCOME
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

PORTFOLIO	FIFO COST	PROCEEDS	FIFO GAIN (LOSS)
Chase	$ 1,377,307	$ 1,033,494	($ 343,813)
Capital Guardian	2,788,414	2,720,190	(68,224)
Babson	2,251,014	2,510,163	259,149
Brown Bros. Harriman	16,324,321	16,495,773	171,452
TOTAL	$22,741,056	$22,759,620	$ 18,564

RECAP:

Short Term Gain	$148,148
Long Term Loss	(129,584)
Gain on Sales of Securities	$ 18,564

RESEARCH CORP

PORTFOLIO: 476060/CHASE

FROM 10/23/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)	
COMMON STOCKS						
[redacted] & CO	11/20/74	300	45.302	28.901	(16.401)	L
[redacted] & CO	11/20/74	600	91.603	57.002	(34.601)	L
[redacted] & CO	11/20/74	700	107.493	67.436	(40.057)	L
[redacted]	11/26/74	1,000	66.471	44.092	(22.379)	L
[redacted]	11/26/74	2,500	168.090	110.231	(57.859)	L
[redacted]	1/ 9/75	300	29.737	26.385	(3.352)	L
[redacted]	1/17/75	1,200	5.941	52.110	46.169	L
[redacted]	1/17/75	600	17.700	26.695	8.995	L
[redacted]	1/17/75	1,300	99.027	56.453	(43.574)	L
[redacted]	1/17/75	200	936	8.685	7.749	L
[redacted]	1/17/75	600	2.808	26.055	23.247	L
[redacted]	1/27/75	1,300	208.163	89.734	(118.429)	L
[redacted]	2/19/75	1,000	30.192	6.975	(23.217)	L
[redacted]	2/20/75	1,000	36.723	6.850	(29.873)	L

RESEARCH CORP

PORTFOLIO: 47GOGO/CHASE

FROM 10/22/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
CO[illegible]					
[illegible] INC	2/20/75	2,500	74,540	17,125	(57,415) L
[illegible] INC	2/20/75	1,000	45,289	10,275	(35,014) L
[illegible] & FRAGRANCES	3/10/75	1	20	18	(10) L
[illegible] CORP	8/10/75	1,000	36,765	41,313	4,548 L
[illegible] PAPER CO	8/10/75	1,200	41,554	60,825	20,271 L
Dow Chemical	10/28/75	100	6,835	9,138	2,303 L
Georgia Pacific	10/28/75	300	11,028	12,824	1,796 L
S.S. Kresge	10/28/75	1,800	57,636	61,383	3,747 L
Schlumberger	10/31/75	1,000	61,400	69,801	8,401 L
Standard Oil Indiana	10/31/75	900	35,199	39,214	4,015 L
Total Common Stocks			1,282,460	938,670	(343,790)
FIXED INCOME					
U S TREASURY BILLS 4/17/75	4/17/75	60,000	59,825	59,825	0
FEDERAL LAND BANKS 8.700 7/21/75	7/21/75	35,000	35,022	35,000	(22) S
TOTAL FIXED INCOME			594,847	594,825	(522)
GRAND TOTAL			$1,277,307	$1,0336.94	(343,813)

RESEARCH CORP

PORTFOLIO: 847270/CAPITAL GUARDIAN

FROM 10/30/74 TO 10/31/75

INVESTMENTS SOLD OR COLLATED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
COMMON STOCKS					
INDEP LIFE & ACC INSUR CO	1/ 3/75	1,000	22.188	6.875	(15.313) L
INDEP LIFE & ACC INSUR CO	1/ 6/75	2,000	44.375	13.750	(30.625) L
SAUL R F REAL EST INVT SBI	1/ 6/75	1,800	21.150	6.995	(14.155) L
INDEP LIFE & ACC INSUR CO	1/ 7/75	2,000	44.375	13.750	(30.625) L
INDEP LIFE & ACC INSUR CO	1/ 8/75	2,000	44.375	14.125	(30.250) L
SAUL R F REAL EST INVT SBI	1/10/75	6,300	72.850	34.499	(40.351) L
INDEP LIFE & ACC INSUR CO	1/15/75	5,000	110.930	35.125	(75.813) L
SAUL R F REAL EST INVT SBI	1/15/75	300	3.525	1.149	(2.376) L
SAUL R F REAL EST INVT SBI	1/16/75	1,245	14.100	4.618	(9.482) L
SAUL R F REAL EST INVT SBI	1/17/75	3,500	41.125	13.573	(27.552) L
SAUL R F REAL EST INVT SBI	1/20/75	12,000	141.000	46.913	(94.087) L
ANACONDA CO	4/16/75	3,200	85.122	57.704	(27.418) L
ANACONDA CO	4/18/75	2,500	85.999	58.523	(27.476) L
DRESSER INDUSTRIES INC	5/ 2/75	8,000	248.750	277.330	28.580 L
DRESSER INDUSTRIES INC	5/ 2/75	500	32.518	37.733	5.217 L
HALL FRANK B & CO INC	5/ 2/75	2,000	44.250	36.144	(8.106) L
DRESSER INDUSTRIES INC	5/ 5/75	500	32.518	38.327	5.811 L
HALL FRANK B & CO INC	5/ 5/75	8,000	177.000	142.659	(34.341) L
DRESSER INDUSTRIES INC	5/ 6/75	1,000	65.032	56.778	11.747 L
HALL FRANK B & CO INC	5/ 7/75	2,000	36.750	36.109	(561) L
HALL FRANK B & CO INC	5/ 7/75	8,000	98.377	144.757	46.380 L
AMAX INC	5/ 4/75	1,000	44.295	51.059	6.764 L
AMAX INC	5/10/75	1,000	44.295	51.781	7.485 L
MCA INC	5/24/75	000	20.461	56.541	36.080 L
WASH POST CO CL B	5/24/75	10,000	196.342	274.900	78.558 L
MCA INC	5/25/75	400	10.102	20.973	10.791 L
MCA INC	5/25/75	1,100	27.807	79.675	51.868 L
MCA INC	5/25/75	400	10.267	28.973	18.706 L
MCA INC	5/25/75	300	7.673	21.730	14.057 L
AMAX INC	7/ 9/75	2,000	75.372	105.400	30.028 L
AMAX INC	7/ 9/75	2,000	88.590	105.400	16.810 L
HEINZ H J CO	7/ 9/75	1,000	30.649	43.269	12.620 L
HEINZ H J CO	7/ 9/75	4,000	193.254	197.076	3.822 L
EXXON CORP	9/10/75	1,800	161.814	154.808	(7.006) L
MCA INC	9/30/75	400	10.267	34.225	23.958 L
MCA INC	10/ 3/75	500	12.778	42.328	29.550 L
MCA INC	10/ 3/75	100	2.567	8.466	5.899 L
NATIONAL SEMICONDUCTOR CORP	10/22/75	2,000	73.500	88.393	14.893 S
NATIONAL SEMICONDUCTOR CORP	10/22/75	500	16.765	22.098	5.333 S
SOUTHERN RY CO	10/22/75	1,000	34.383	50.899	16.516 L
SOUTHERN RY CO	10/22/75	1,000	34.040	50.899	16.859 L
TOTAL COMMON STOCKS			$2,530,414	$2,660,190	$21,776

RESEARCH CORP

PORTFOLIO: 547870/CAPITAL GUARDIAN

FROM 10/22/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
CONVERTIBLE BONDS					
FLORIDA GAS CO SUB DEB CONV 5.750 4/ 1/00	6/24/75	150,000	150,000	96,000	(54,000) L
FLORIDA GAS CO SUB DEB CONV 5.750 4/ 1/00	6/24/75	100,000	100,000	64,000	(36,000) L
TOTAL CONVERTIBLE BONDS			$250,000	$160,000	($90,000)
Grand Total			$2,788,414	$2,720,190	($68,224)

SECURITIES SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
COMMON STOCKS					
HARTFORD STEAM BOILER INS CO	11/13/74	500	23.461	13.225	(10.236) L
STANDARD BRANDS INC	11/13/74	3,000	131.362	152.270	20.908 L
STANDARD BRANDS INC	11/13/74	1,000	42.918	50.757	7.839 L
STANDARD BRANDS INC	11/13/74	1,000	48.853	50.757	1.904 L
WESTERN BANCORPORATION	11/13/74	1,000	35.380	17.062	(18.318) L
WESTERN BANCORPORATION	11/13/74	1,000	32.704	17.062	(15.642) L
WESTERN BANCORPORATION	11/13/74	1,000	34.802	17.062	(17.740) L
WESTERN BANCORPORATION	11/13/74	1,000	33.498	17.062	(16.436) L
WESTERN BANCORPORATION	11/13/74	2,000	75.605	34.124	(41.481) L
WESTERN BANCORPORATION	11/13/74	1,500	82.025	25.593	(30.432) L
GENERAL AMER OIL CO TEXAS	1/17/75	0	12	11	(1) L
MINNESOTA MNG & MFG CO	1/24/75	2,000	80.110	85.729	(2.381) L
MINNESOTA MNG & MFG CO	1/24/75	1,000	44.642	42.862	(1.780) L
MINNESOTA MNG & MFG CO	1/24/75	1,000	52.262	42.862	(9.400) L
MINNESOTA MNG & MFG CO	1/24/75	1,000	57.760	42.862	(14.898) L
MINNESOTA MNG & MFG CO	1/24/75	3,000	120.385	120.586	8.201 L
HARTFORD STEAM BOILER INS CO	3/31/75	500	23.461	15.725	(7.736) L
HARTFORD STEAM BOILER INS CO	3/31/75	500	24.625	15.725	(8.900) L
MARATHON OIL CO	4/ 4/75	3,000	113.254	95.394	(17.860) L
AIR PRODS & CHEMS INC	4/ 7/75	1,613	29.661	105.545	75.884 L
HARTFORD STEAM BOILER INS CO	4/ 8/75	500	29.250	18.720	(10.530) L
HARTFORD STEAM BOILER INS CO	4/ 8/75	400	19.573	12.480	(7.093) L
HONEYWELL INC	5/ 7/75	500	30.937	14.062	(16.875) L
HONEYWELL INC	5/ 7/75	500	30.110	14.062	(16.048) L
HONEYWELL INC	5/ 7/75	1,500	134.500	44.967	(89.533) L
AIR PRODS & CHEMS INC	5/ 8/75	1,000	18.309	74.418	56.109 L
HONEYWELL INC	5/ 8/75	200	15.025	5.953	(9.072) L
HONEYWELL INC	5/ 8/75	1,000	100.005	29.749	(70.256) L
HONEYWELL INC	5/ 8/75	300	22.349	8.925	(13.424) L
HONEYWELL INC	5/ 8/75	500	52.450	14.875	(37.575) L
ABBOTT LABS	9/16/75	1,000	32.013	32.592	578 L
AIR PRODS & CHEMS INC	9/16/75	1,000	18.349	59.246	40.897 L
GILLETTE CO	9/16/75	1,000	40.797	23.782	(17.015) L
HALLIBURTON CO	9/16/75	500	41.963	81.142	39.179 L
HARTFORD STEAM BOILER INS CO	9/19/75	500	24.325	16.781	(7.544) L
AIR PRODS & CHEMS INC	10/ 3/75	1,807	35.075	112.846	77.771 L
AIR PRODS & CHEMS INC	10/ 3/75	3,165	50.053	128.191	78.138 L
AIR PRODS & CHEMS INC	10/ 3/75	928	21.547	54.696	33.149 L
HALLIBURTON CO	10/ 3/75	1,000	86.220	157.263	70.043 L
HALLIBURTON CO	10/ 3/75	1,600	125.809	235.004	109.195 L
MERCK & CO INC	10/ 3/75	1,000	45.055	69.992	24.937 L
MERCK & CO INC	10/ 3/75	1,000	40.228	69.992	29.764 L
MERCK & CO INC	10/ 3/75	2,000	88.904	139.985	50.081 L
AIR PRODS & CHEMS INC	10/10/75	1,337	28.733	73.558	43.825 L
AIR PRODS & CHEMS INC	10/10/75	762	25.172	44.750	19.578 L
AIR PRODS & CHEMS INC	10/10/75	1	49	54	5 L
GEORGIA PAC CORP	10/31/75	0	10	16	6 L
TOTAL COMMON STOCKS			$2,251,014	$2,510,163	$259,149

RESEARCH CORP

PORTFOLIO: 583040/BROWN BROS HARRIMAN

FROM 10/23/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)	
SHORT TERM NOTES & ACCEPTANCES						
INTL HARVESTER CR CORP 6.250 9/16/75	9/16/75	100,000	100,000	100,000	0	
INTL HARVESTER CR CORP 6.250 9/23/75	9/23/75	100,000	100,000	100,000	0	
COA IMP BANK OF COLUM NT 6.375 10/23/75	10/23/75	100,000	100,000	100,000	0	
CLEVELAND ELEC ILLUM NT 7.125 1/15/90	10/23/75	150,000	131,313	124,020	(7,293)	L
COA IMP BANK OF COLUM NT 5.500 10/27/75	10/27/75	150,000	150,000	150,000	0	
TOTAL SHORT TERM NOTES			$581,313	$574,020	($7,292)	
FIXED INCOME						
SOUTHWESTERN BELL TEL CO DEB 6.750 6/ 1/00	10/29/74	400,000	398,335	392,145	(6,190)	S
COMMONWEALTH EDISON DEB 7.625 2/15/03	11/ 2/74	100,000	10,000	9,720	(280)	S
COMMONWEALTH EDISON DEB 7.625 2/15/03	11/ 5/74	1,000	1,000	1,560	560	S
AMERICAN TEL & TELEG CO DEB 7.000 2/15/01	11/ 6/74	100,000	77,000	82,875	5,875	S
AMERICAN TEL & TELEG CO DEB 7.125 12/ 1/03	11/ 6/74	300,000	241,500	250,875	9,375	S
BELL TEL CO PA DEB 7.125 1/ 1/12	11/14/74	500,000	386,950	413,250	26,300	S
U S GYPSUM CO DEB 7.075 1/ 1/04	11/15/74	250,000	208,943	233,720	24,777	S
PFIZER INC DEB 6.600 4/15/98	11/19/74	500,000	456,075	494,865	38,790	S

RESEARCH CORP

PORTFOLIO: 883040/BROWN BROS HARRIMAN

FROM 10/23/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)	
FIXED INCOME						
ANHEUSER BUSCH INC S F DEB 7.950 2/ 1/99	10/27/74	250,000	250,000	231,210	(18,790)	L
AMERICAN TEL & TELEG CO DEB 7.000 2/15/01	10/30/74	100,000	74,692	83,008	8,316	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	1/ 8/75	250,000	205,163	222,700	17,537	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	1/ 8/75	100,000	86,105	89,080	2,975	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	1/ 8/75	250,000	209,585	222,700	13,115	S
SOUTHERN BELL TEL & TELEG DB 7.875 3/15/13	1/29/75	600,000	529,824	539,520	9,702	S
CENTRAL ILL PUB SVC CO 1 MTG 8.500 3/ 1/04	2/12/75	300,000	304,125	290,607	(13,518)	L
UNION CARBIDE CORP 8.500 1/15/05	2/12/75	200,000	200,000	202,146	2,146	S
JOHN MANSVILLE CORP SF DEB 7.875 1/ 1/04	2/13/75	250,000	231,788	239,013	7,225	S
ANHEUSER BUSCH INC S F DEB 7.950 2/ 1/99	2/20/75	75,000	75,000	72,658	(2,342)	L
PUBLIC SVC ELEC & GAS 1REF E 13.000 10/ 1/04	2/20/75	100,000	100,000	110,000	10,000	S
UNION CARBIDE CORP 8.500 1/15/05	2/20/75	300,000	300,000	303,319	3,319	S
SOUTHWESTERN BELL TEL CO DEB 7.63% 10/ 1/13	2/27/75	500,000	452,000	449,550	(2,510)	S
UNITED STATES INTAS BDS 8.500 5/15/99	3/ 5/75	500,000	492,750	522,500	29,750	L
GOVT NATL MTG ASSN 8.500 8/15/03	3/ 6/75	898,600	756,153	795,225	39,072	S
MICH WIS PIPELINE CO 1ST MTG 9.625 4/ 1/94	3/ 5/75	250,000	249,758	249,375	(423)	L
MOBIL ALASKA PIPELINE MTG DB 8.400 3/ 1/05	3/21/75	500,000	500,000	485,030	(14,970)	S

RESEARCH CORP

PORTFOLIO: 583040/BROWN BROS HARRIMAN

FROM 10/22/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
FIXED INCOME					
ANHEUSER BUSCH INC S F DEB 7.050 2/ 1/99	6/17/75	75.000	75.000	72.366	(2.634) L
ANHEUSER BUSCH INC S F DEB 7.050 2/ 1/99	6/17/75	25.000	25.000	24.122	(878) L
XEROX CORP DEB 8.025 11/ 1/98	6/25/75	250.000	249.375	249.688	313 S
CATERPILLAR TRACTOR CO DEB 8.750 11/ 1/99	8/ 1/75	250.000	245.060	248.750	3.690 S
MINN MINING & MFG CO DEB 8.850 4/ 1/05	8/ 7/75	250.000	253.435	247.813	(5.622) S
WEYERHAUSER CO DEB 8.900 11/15/04	8/13/75	400.000	400.000	392.500	(7.500) L
WEYERHAUSER CO DEB 8.900 11/15/04	8/13/75	50.000	50.000	49.063	(937) L
WEYERHAUSER CO DEB 8.900 11/15/04	8/13/75	100.000	100.000	98.125	(1.875) L
SHELL OIL CO DEB 5.300 3/15/92	8/27/75	350.000	232.936	251,503	18.567 L
GOVT NAT'L MTG ASSOS 6.500 12/15/98	9/ 4/75	13.000	12.083	13.928	1.845 S
CATERPILLAR TRACTOR CO DEB 8.750 11/ 1/99	9/ 8/75	500.000	487.500	486.125	(1.375) S
GOVT NAT'L MTG ASSOS 6.500 12/15/98	9/19/75	1.600	1.354	1.561	207 S
SHELL OIL CO DEB 7.250 2/15/02	9/19/75	300.000	251.307	249.930	(1.377) S
GENERAL MTRS CORP NOTE 8.625 4/ 1/05	9/24/75	250.000	248.750	243.120	(5.630) S
GENERAL MTRS CORP NOTE 8.625 4/ 1/05	9/24/75	250.000	244.850	243.120	(1.730) S
GENERAL ELEC CO DEB 8.500 5/ 1/04	9/26/75	250.000	240.553	241.188	635 S
ALUMINUM CO AMERICA DEB 8.800 5/15/06	10/ 2/75	150.000	151.126	142.334	(8.791) L

RESEARCH CORP

PORTFOLIO: 583040/BROWN BROS HARRIMAN

FROM 10/22/74 TO 10/31/75

	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
INVESTMENTS SOLD OR COLLECTED					
FIXED INCOME					
PROCTER GAMBLE CO 8.250 3/ 1/05	10/ 6/75	100,000	99.541	95.000	(4.541) S
DU PONT E I DE NEMOURS DEB 8.450 11/15/04	10/30/75	100,000	98.125	98.150	0.025 S
GOVT NAT'L MTG ASSOC 6.900 12/15/98	10/30/75	13,100	11.327	13.070	1,733 S
SHELL OIL CO DEB 8.300 3/15/02	10/28/75	350,000	348.345	356.848	8.503 S
Michigan Bell Tele 7.00 11/1/12	10/16/75	100,000	83,976	79,273	(4,703) L
Procter & Gamble 8.250 3/1/05	10/22/75	100,000	96,525	97,000	475 S
Union Carbide 8.500 1/15/05	10/31/75	250,000	239,050	246,250	7,200 S
Total Fixed Income			$15,749,008	$15,921,949	$178,941
Grand Total			$28,324,321	$16,495,773	$171,452

RESEARCH CORPORATION - 13-1963407
405 Lexington Avenue, New York, N. Y. 10017
FORM 990 PF - PAGE 1 - PART I - LINE 14 and
FORM 990 PF - PAGE 4 - PART VI - SCHEDULE B
COMPENSATION OF OFFICERS, DIRECTORS and TRUSTEES
FOR THE FISCAL YEAR ENDED OCTOBER 31, 1975

Name	Position	Time Devoted to Position	Pg. 1 Col. A Total Compensation	Pg. 1 Col. B & C Administrative Expenditures	Pg. 3 Col. D Active Conduct Exempt Purposes
James S. Coles 036-22-7040	(a) President and Director	100%	$ 80,000 (2)	$ 32,000	$ 48,000
Charles H. Schauer 164-03-8597	(a) Exec. Vice Pres. and Director	100%	59,400 (2)	19,800	39,600
Bayard R. Hand 163-16-5194	(a) Vice President, Finance	100%	44,400 (2)	17,760	26,640
Sam C. Smith 441-30-7633	(a) Vice President, Grants	100%	44,916 (2)		44,916
Willard Harcy 119-03-0355	(a) Vice President, Patents	100%	49,000 (2)	49,000	
Richard S. Baldwin 052-18-1046	Secretary and Asst. to Pres.	100%	44,400 (2)	17,760	26,640
Jack W. Powers 305-28-2308	Vice Pres., Program Support	100%	18,500 (2)		18,500
Margaret M. McCarthy 055-26-2505	Assistant Secretary	100%	15,240	6,096	9,144
Carlyle G. Caldwell	Director	(1)	(3)		
Burt N. Dorsett	Director	(1)	(3)		
Joseph C. Elgin	Director	(1)	(3)		
John B. Garrison	Treasurer and Director	(1)	None (3)		
William G. Hendrickson	Director	(1)	(3)		
James A. Jacobson	Director	(1)	(3)		
Colin D. Mackay	Director	(1)	(3)		
Robert V. Morse	Director	(1)	(3)		
S. Dillon Ripley	Director	(1)	(3)		
John P. Schaefer	Director	(1)	(3)		
Frederick Seitz	Director	(1)	(3)		
George L. Shinn	Director	(1)	(3)		
Calvin A. Vanderhoef	Director	(1)	(3)		
Total			$355,856	$142,416	$213,440

Notes to above schedule: See Page 2

RESEARCH CORP

PORTFOLIO: 803040/BROWN BROS HARRIMAN

FROM 10/22/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)	
FIXED INCOME						
ANHEUSER BUSCH INC S F DEB 7.050 2/ 1/99	12/27/74	250,000	250,000	231,310	(18,790)	L
AMERICAN TEL & TELEG CO DEB 7.000 2/15/01	12/30/74	100,000	74,692	83,008	8,316	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	1/ 8/75	250,000	205,163	222,700	17,537	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	1/ 8/75	100,000	80,105	89,080	2,975	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	1/ 8/75	250,000	209,585	222,700	13,115	S
SOUTHERN BELL TEL & TELEG DB 7.625 2/15/13	1/29/75	600,000	529,024	539,526	9,702	S
CENTRAL ILL PUB SVC CO 1 MTG 8.500 3/ 1/04	2/12/75	300,000	304,126	290,607	(13,518)	L
UNION CARBIDE CORP 8.500 1/15/05	2/12/75	200,000	200,000	202,146	2,146	S
JOHN MANSVILLE CORP SF DEB 7.750 1/ 1/04	2/13/75	250,000	231,788	239,013	7,225	S
ANHEUSER BUSCH INC S F DEB 7.950 2/ 1/99	2/20/75	75,000	75,000	72,658	(2,342)	L
PUBLIC SVC ELEC & GAS 1REF B 10.000 10/ 1/04	2/20/75	100,000	100,000	110,000	10,000	S
UNION CARBIDE CORP 8.500 1/15/05	2/20/75	300,000	300,000	303,219	3,219	S
SOUTHWESTERN BELL TEL CO DEB 7.625 10/ 1/13	2/27/75	500,000	452,000	449,550	(2,510)	S
UNITED STATES TREAS BDS 8.500 8/15/98	3/ 5/75	500,000	492,750	522,500	29,750	L
GOVT NATL MTG ASSN 8.800 6/15/03	3/ 6/75	698,600	756,153	795,225	39,072	S
MICH WIS PIPELINE CO 1ST MTG 8.625 6/ 1/04	3/ 6/75	250,000	249,798	249,375	(433)	L
MOBIL ALASKA PIPELINE 6TD DB 8.450 2/ 1/05	3/21/75	500,000	500,000	485,050	(14,970)	S

RESEARCH CORP

PORTFOLIO: 847370/CAPITAL GUARDIAN

FROM 10/22/74 TO 10/31/75

INVESTMENTS SOLD OR COLLECTED	DATE	SHARES OR PAR VALUE	COST	PROCEEDS	GAIN (LOSS)
COMMON STOCKS					
INDEP LIFE & ACC INSUR CO	1/ 3/75	1,000	22.186	6.875	(15.213) L
INDEP LIFE & ACC INSUR CO	1/ 6/75	2,000	44.375	13.750	(30.625) L
SAUL B F REAL EST INVT SBI	1/ 6/75	1,000	21.150	6.955	(14.195) L
INDEP LIFE & ACC INSUR CO	1/ 7/75	2,000	44.375	13.750	(30.625) L
INDEP LIFE & ACC INSUR CO	1/ 9/75	2,000	44.375	14.125	(30.250) L
SAUL B F REAL EST INVT SBI	1/10/75	6,200	77.850	24.499	(40.351) L
INDEP LIFE & ACC INSUR CO	1/15/75	5,000	110.938	35.125	(75.013) L
SAUL B F REAL EST INVT SBI	1/15/75	300	3.525	1.149	(2.375) L
SAUL B F REAL EST INVT SBI	1/16/75	1,200	14.100	4.638	(9.462) L
SAUL B F REAL EST INVT SBI	1/17/75	3,500	41.125	13.573	(27.552) L
SAUL B F REAL EST INVT SBI	1/20/75	12,000	141.000	46.913	(94.087) L
ANACONDA CO	4/16/75	3,200	85.122	57.704	(27.418) L
ANACONDA CO	4/18/75	3,000	85.999	58.523	(27.476) L
DRESSER INDUSTRIES INC	5/ 2/75	5,000	248.750	277.330	28.580 L
DRESSER INDUSTRIES INC	5/ 2/75	500	22.516	27.733	5.217 L
HALL FRANK B & CO INC	5/ 5/75	2,500	44.250	38.144	(6.106) L
DRESSER INDUSTRIES INC	5/ 5/75	500	22.516	28.327	5.811 L
HALL FRANK B & CO INC	5/ 5/75	8,000	177.000	142.658	(34.341) L
DRESSER INDUSTRIES INC	5/ 6/75	1,000	45.032	56.779	11.747 L
HALL FRANK B & CO INC	6/ 7/75	2,500	36.750	36.189	(561) L
HALL FRANK B & CO INC	6/ 7/75	8,000	98.377	144.757	48.380 L
AMAX INC	6/ 4/75	1,000	44.295	51.059	6.764 L
AMAX INC	6/10/75	1,000	44.295	51.701	7.406 L
MCA INC	6/24/75	800	20.461	56.541	36.080 L
WASHINGTON POST CO CL B	6/24/75	10,000	196.342	274.900	78.558 L
MCA INC	6/25/75	400	10.182	28.973	18.791 L
MCA INC	6/25/75	1,100	27.807	79.675	51.868 L
MCA INC	6/25/75	400	10.267	28.973	18.706 L
MCA INC	6/25/75	300	7.673	21.730	14.057 L
AMAX INC	7/ 9/75	2,000	75.372	105.400	30.028 L
AMAX INC	7/ 9/75	2,000	88.590	105.400	16.810 L
HEINZ H J CO	7/ 9/75	1,000	36.649	49.269	12.620 L
HEINZ H J CO	7/ 9/75	4,000	183.254	187.076	3.822 L
EXXON CORP	9/18/75	1,000	161.814	154.808	(7.306) L
MCA INC	9/30/75	400	10.267	34.325	23.058 L
MCA INC	10/ 3/75	500	12.778	42.328	29.550 L
MCA INC	10/ 3/75	100	2.567	8.466	5.899 L
NATIONAL SEMICONDUCTOR CORP	10/22/75	2,000	73.000	88.393	14.803 S
NATIONAL SEMICONDUCTOR CORP	10/22/75	500	18.705	22.038	5.333 S
SOUTHERN RY CO	10/23/75	1,000	24.363	39.880	15.516 L
SOUTHERN RY CO	10/23/75	1,000	24.363	39.880	15.060 L
TOTAL COMMON STOCKS			[illegible]	[illegible]	[illegible]

RESEARCH CORPORATION 13-1963407
405 Lexington Avenue, New York, N. Y. 10017
FORM 990PF - PAGE 1 - PART I - LINE 20
PAGE 2 - BALANCE SHEET - PART III - LINE 10 (c)
FIXED ASSETS and DEPRECIATION
For the Fiscal Year Ended October 31, 1975

Kind of Property	Fixed Assets				Depreciation			
	Balance 10/31/74	Additions	Disposals	Balance 10/31/75	Balance 10/31/74	Additions	Disposals Less Salvage	Balance 10/31/75
Furniture & Fixtures								
New York Office	$ 90,339	$ 4,381		$ 94,720	[illegible]	[illegible]		$55,631
Atlanta Office	2,997			2,997	[illegible]	[illegible]		718
Minneapolis Office	4,756	182		4,938	[illegible]	[illegible]		2,298
Providence Office	4,239			4,239	[illegible]	[illegible]		1,845
Burlingame Office	2,741			2,741	[illegible]	[illegible]		2,044
Office Equipment								
New York Office	41,763	7,083	($1,184)	47,662	[illegible]	[illegible]	($ 849)	28,619
Atlanta Office	2,700	172		2,872	[illegible]	[illegible]		1,337
Minneapolis	2,273	780	($10)	2,543	[illegible]	[illegible]	($35)	1,423
Providence Office	4,005			4,005	[illegible]	[illegible]		2,149
Burlingame Office	3,285			3,285	[illegible]	[illegible]		2,295
Questors - Non-depr.	1,010			1,010				
Total	$160,108	$12,598	($1,694)	$171,012	[illegible]	[illegible]	($1,184)	[illegible]

(13)
TREASURY DEPARTMENT
Internal Revenue Service
Sept. 1937

QUESTIONNAIRE

FOR RELIGIOUS, CHARITABLE, SCIENTIFIC, LITERARY, AND EDUCATIONAL ORGANIZATIONS

October 28, 1937.

Claiming Exemption Under Section 101(6) of the Revenue Act of 1936

IT:RR _____

Research Corporation,
405 Lexington Avenue,
New York, New York.

If the name and address at the left hereof is not the present name and address please indicate present name and address in appropriate space in affidavit below.

RECEIVED
DEC 16 1937
Rules and Regulations Division

State of New York)
) ss:
County of New York)

Howard A. Poillon (Name of affiant) deposes and says that he is the President (Title of affiant) of the Research Corporation (Full name of organization) located at 405 Lexington Avenue, New York, New York (Full address, including street and number), and that the following answers and statements and attached financial statements showing the assets and liabilities of the organization and a classified list of the receipts and disbursements as well as statements required under Items 4 and 5 hereof covering the accounting period indicated are true to the best of his knowledge and belief:

1. Have your articles of incorporation or association or by-laws been changed or amended since copies thereof were last submitted to the Bureau?

Answer: By Chapter 523 of the Laws of 1932, which became law March 30, 1932, a copy of which is attached

hereto and marked "EXHIBIT A", the Legislature of the State of New York ratified the incorporation of Research Corporation, ratified and approved acts and proceedings taken in its behalf including the holding of its own capital stock, and ratified and provided for the election of its directors.

The By-laws of the Corporation have been changed from time to time. There is attached hereto marked "EXHIBIT B" a copy of the By-laws in effect November 1, 1937.

2. State below the actual activities of the organization since it was held to be exempt, indicating any new or additional activities and whether any activities previously carried on have been abandoned.

Answer: Research Corporation is a foundation organized and operated exclusively for the advancement of science. All the net earnings of the foundation, over and above such sum or sums as have been reserved or retained and held as an endowment fund or working capital, have been applied to the advancement of science through the support of technical and scientific investigation, research and experimentation, and none of its net earnings have inured to the benefit of any private shareholder or individual. This Corporation, organized under the laws of the State of New York, was held to be exempt by the Commissioner's Ruling made under date of February 1, 1915 (a copy of which is attached hereto marked "EXHIBIT C"). The

history and activities of the Corporation are as follows:

In the early years of the present century Dr. Cottrell was a member of the faculty of chemistry at the University of California. While working on a set of problems in sulphuric acid manufacture, he came upon certain phenomena which promised to lead to improvements in the electrostatic collection of smokes and fumes. Just about this time the operations in Western smelters were technologically so imperfect and by the emissions from the stacks caused such serious damage to vegetation that it seemed likely that these operations could not legally continue. Thus there was an opportunity for the application of Dr. Cottrell's discoveries, and in conjunction with his associates, Professor Edmund O'Neill, Dr. Harry East Miller and E. S. Heller, who contributed both personally and financially, his ideas were worked out and their practical development undertaken.

A dominant desire for the advancement of science and the development of its applications led Dr. Cottrell to offer the fruits of his discoveries to the University of California in the hope that this action of his, and similar action which he hoped he would inspire in others, would result in having a continuous fund for the further prosecution of research. After protecting his invention by patents, and incorporating the International and Western Precipitation Companies as vehicles for the commercial development which was necessary if funds were to be secured for further

research, Dr. Cottrell proposed that his discoveries be administered by the University of California. However, as development of the inventions proceeded, it became apparent that the active control and administration thereof by a single institution of learning was not expedient. In order to provide a means of repayment for the original investment in the development of the inventions, Dr. Cottrell reserved the Pacific coast, the cement industry and foreign rights to the above companies in control of a former student, Mr. Walter A. Schmidt, who had studied under him. Dr. Cottrell then came east and, with the same hope that had prompted him to offer his discoveries to the University of California, he offered the rights for the remainder of the United States to the Smithsonian Institution at Washington, D.C. The Board of Trustees of the Smithsonian Institution deemed it inexpedient for the Institution to undertake to carry out Dr. Cottrell's plans, but authorized the late Dr. Charles Walcott, its Secretary, to cooperate with Dr. Cottrell in organizing a corporation with an independent Board of Directors, and with power to engage in the nsoessary exploitation of the Cottrell patents in order that the ideals of their donor in the field of scientific research might be effectuated.

Through their efforts a group of seventeen public spirited citizens, including Dr. Walcott, who desired to further the objects of Dr. Cottrell, was formed to advance initial working capital of $10,000.

The result was Research Corporation, a New York corporation, organized in 1912 for the purpose of aiding and encouraging technical and scientific investigation, research and experimentation. At that time there was doubt that the Membership Corporation Law of the State of New York provided complete limited liability for its members, and it was concluded to incorporate pursuant to the provisions of the New York General Corporations, Business Corporations and Stock Corporations Laws as the safest way under the then existing law to protect the independent board which would administer the Corporation.

The Certificate of Incorporation provides that the Corporation may hold, experiment with and exploit patents, but any property received by the Corporation, and the proceeds or income thereof, are to be applied to the purposes stated in the Certificate of Incorporation, as follows:

> "To provide means for the advancement and extension of technical and scientific investigation, research and experimentation by contributing the net earnings of the corporation, over and above such sum or sums as may be reserved or retained and held as an endowment fund or working capital, and also such other moneys and property belonging to the corporation as the board of directors shall from time to time deem proper, to the Smithsonian Institution, and such other scientific and educational institutions and societies as the board of directors may from time to time select in order to enable such institutions and societies to conduct such investigation, research and experimentation."

The Certificate of Incorporation prohibits the declaration or payment of dividends and provides that the

entire net profits earned by the capital stock shall be applied to or expended for the purposes of the Corporation.

Simultaneously with the organization of the Corporation, the members of the group who were to advance the original working capital agreed that the Corporation might at any time acquire their stock at so much of the par value thereof as should have been actually paid thereon.

Within approximately two years of its incorporation Research Corporation had acquired all of its outstanding stock. The corporate structure thus obtaining was confirmed by the Legislature of the State of New York by Chapter 523 of the Laws of 1932 (Exhibit A hereto attached). Thus at no time was it possible nor did it ever happen that any funds of Research Corporation were diverted from its scientific, educational and charitable objective.

At the time of the organization of the Corporation Dr. Cottrell donated, subject to the reservation of the territorial rights mentioned above, the original Cottrell Electrical Precipitator patents. The Corporation has developed and exploited these together with other patents which have been granted to it on extensions of and improvements in the art. Aside from the management and supervision of its endowment the Corporation's actual activities consist of making installations and license arrangements for operation by others under the Cottrell Precipitator Process patents; it conducts experimentation

and research in connection with the art of precipitation, with particular reference to overcoming nuisances which arise from the discharge into the air of dust laden or otherwise contaminated gases, smoke or fumes and preventing waste by separating suspended particles from the air or gas, and conserving such precipitated matters whenever they have value; it also investigates and conducts research work on other projects in the fields of physics, chemistry and biology. In addition to its own scientific activities, Research Corporation makes grants or payments to the Smithsonian Institution and to universities, and finances research and experimentation in special fields of physics, chemistry and biology. It also cooperates with educational institutions, such as the Massachusetts Institute of Technology, in the investigation, research and experimentation to test the practical application of inventions made by members of the faculty of such institutions. During 1936, in addition to contributions to the Smithsonian Institution, Research Corporation made contributions to the following universities: Massachusetts Institute of Technology, University of California, Stevens Institute of Technology, Columbia University, Stanford University, University of Chicago and Johns Hopkins University.

Since February 1, 1915, the date on which Research Corporation was ruled exempt, the activities of that organization have consisted in the continued development and

exploitation of the original Cottrell Electrical Precipitator patents, as well as of the patents which have been granted to the Corporation on extensions of and improvements in the art of precipitation. In addition to the research activities and its experimentations and tests of the validity of discoveries made by its own staff, the Corporation applies the same technique of experimentation and development in connection with the scientific research of others, including members of the faculties of educational institutions under cooperative arrangements with such institutions. Where research and scientific investigation have resulted in discoveries, such discoveries are subjected to practical experimentation to determine their merit. Where the discoveries are without merit, such discoveries are abandoned, but where the discoveries indicate merit they are further developed in such manner as is expedient, as was the case with the original Cottrell Precipitator patents. The activities of the Corporation and the technique of its investigation, research and experimentation have remained unchanged. As provided for in the Certificate of Incorporation a portion of the profits received by Research Corporation have been reserved for the creation of a working capital and endowment fund to support future research and experimentation. All profits in excess of these reserves received by Research Corporation, whether from the Cottrell patents or otherwise, have been devoted to further technical and scientific investigation, research and experimentation and the advancement of science as directed in the Certificate of Incorporation.

3. Describe fully any activity having as its purpose the influencing of legislation.

Answer: The Corporation has never and does not now engage in any activity having as its purpose the influencing of legislation.

4. Attach separate statement for your latest accounting period showing salaries or any other payments made to any administrative officer, shareholder or trustee, the reason for such payment, and the amount thereof.

Answer: There is attached hereto marked "EXHIBIT D" a separate statement for the Corporation's latest accounting period ended December 31, 1936, showing salaries or any other payments made to any administrative officer, shareholder or trustee. The payments shown on such schedule to the President and Secretary are the only payments made by the Corporation to administrative officers. The payments made to these officers are reasonable compensation for their duties in administering the affairs of the Corporation.

5. If your organization is a hospital attach separate statement for your latest accounting period showing the number of pay patients, part-pay patients, and free patients treated.

Answer: The Corporation is not a hospital.

6. Attach financial statements showing the assets and liabilities of the organization as at the close of the latest accounting period (ended) and a classified list of the receipts and disbursements during the same

accounting period.

Answer: The financial statements showing the assets and liabilities of the organization as at the close of the latest accounting period ended December 31, 1936, and a classified list of the receipts and disbursements during the same period are attached hereto and marked "EXHIBIT E".

Research Corporation
Howard Adviller
President

Subscribed and sworn to before me this 15th day of December, 1937.

Alice Catherine Handel
NOTARY PUBLIC
New York County No. 2/5
New York Register's No. 8H-480
Commission expires March 30, 1938

Attach:
Financial statements and
statements called for
by items 4 and 5 above.

EXHIBIT A

LAWS OF NEW YORK.—By Authority

CHAPTER 523

AN ACT to ratify the incorporation of Research Corporation, to ratify and approve acts and proceedings taken in its behalf including the holding of its own capital stock and to ratify and provide for the election of its directors

Became a law March 30, 1932, with the approval of the Governor. Passed, three-fifths being present

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Research Corporation, formed by the filing of its certificate of incorporation in the office of the secretary of state on the twenty-sixth day of February, nineteen hundred twelve, shall be deemed and held and is hereby declared to be a valid corporation, from the time of the filing of said certificate of incorporation in the office of the secretary of state as aforesaid, governed and regulated so far as applicable by the provisions of the business corporations law as then existing and the later laws enacted in amendment thereof or in supplement thereto or in substitution therefor, and duly organized and existing for the purposes and with the powers (which shall be deemed to include the power to hold all of its own capital stock) set forth in said certificate of incorporation.

§ 2. All acts and things heretofore done, and proceedings heretofore had or taken by or on behalf of Research Corporation are hereby ratified, legalized and confirmed, including the acts of said corporation in repurchasing from its stockholders all of the outstanding shares of its capital stock and in thereafter holding said shares of stock.

§ 3. The election of C. G. Abbot, Harvey N. Davis, Frederick A. Goetze, Hamilton Hadley, Elon H. Hooker, Otto H. Kahn, Ivy L. Lee, Alfred L. Loomis, Dave H. Morris, Frederick H. Osborn, Howard A. Poillon, Lloyd N. Scott and Charles A. Stone as directors of Research Corporation is hereby legalized, ratified and confirmed and the acts of said directors and all acts of any and all persons who have heretofore acted as directors of said corporation are hereby legalized, ratified and confirmed, notwithstanding any defect or irregularity with respect to their election or otherwise. The voting power upon any of Research Corporation's stock held by said corporation shall, so long as so held, and whether constituting the whole or a part only of its capital stock, be vested in said corporation.

§ 4. The purposes of Research Corporations* shall continue to be as stated in article second of its said certificate of incorporation, to wit:

(a) To receive by gift and to acquire by purchase or otherwise, inventions, patent rights and letters patent either of the United States or foreign countries, and to hold, manage, use, develop,

* So in original.

EXHIBIT B

RESEARCH CORPORATION

BY-LAWS

(As of November 1st, 1937)

ARTICLE I.

Stockholders' Meetings.

Sec. 1. The annual stockholders' meeting of the Corporation shall be held on the third Friday of January in each year at the office of the Corporation, at two o'clock in the afternoon, or at such other hour and place in the State of New York as the Board of Directors may determine.

Sec. 2. At each such annual meeting five Directors shall be elected to succeed the Directors whose terms have expired, or are about to expire, to serve for a term of three years and until their successors are elected and qualified, and such other Directors as may be necessary to fill vacancies in the Board of Directors caused by resignation or otherwise, for the unexpired terms and until their successors are elected and qualified.

Sec. 3. At least one month before each annual meeting the Secretary shall mail to each Director a list of the Directors, indicating those whose terms are about to expire and existing vacancies, with a request that nominations be submitted at least fifteen days before the date of the annual meeting.

Sec. 4. Notice of annual meetings either written or printed, shall be mailed or delivered ten days before each such meeting to each Director, addressed to him at his post-office address appearing upon the books of the Corporation, and such notice shall state that proxies to vote the stock of the Corporation will be elected at such meeting in accordance with Article II, Section 9 of the By-Laws. A list of nominations for Directors shall accompany every such notice. It shall not be necessary to publish a notice of such meeting.

Sec. 5. Special stockholders' meetings except as otherwise required by statute, may be called at any time by

the President, to be held at such time and place as the President may determine. It shall also be the duty of the President, or, in his absence, of the Vice-President, to call special stockholders' meetings whenever requested in writing so to do by three Directors; and in case of a refusal or neglect to comply with such request within ten days the Secretary shall call such meeting.

Sec. 6. Notice of special meetings shall be given by mailing or delivering a notice thereof to each Director, and addressed to him at his post-office address appearing upon the books of the Corporation, at least ten days before such meeting. Such notice shall briefly state the object of said meeting, and that proxies will be elected to vote the stock of the Corporation as to such object. No business not so stated shall be considered at such meeting, except by unanimous consent.

Sec. 7. At all stockholders' meetings, at least a majority of the outstanding capital stock of the Corporation, represented in person or by proxy, shall be necessary to constitute a quorum.

Sec. 8. If for any reason the annual stockholders' meetings shall not be held as hereinbefore provided, such annual meeting shall be called on a date fixed by the Board of Directors or the Executive Committee.

Sec. 9. At all stockholders' meetings the following order of business shall be observed, so far as consistent with the purposes of the meeting, viz.:

Reading of Minutes.
Report of the Treasurer.
Report of the Secretary.
Reports of Committees.
Election of Directors.
Miscellaneous Business.

Sec. 10. Every stockholder entitled to vote at any meeting may so vote by proxy provided that such proxy be executed in writing by the stockholder or by his duly authorized attorney or by the secretary of the corporation owning the stock. No proxy shall be valid after the expiration of three months from the date of its execution.

Sec. 11. At all meetings for the election of Directors, two inspectors of election shall be first elected by a majority of all the stock represented at the meeting. Such Inspectors shall qualify as required by law.

ARTICLE II.

Board of Directors.

Sec. 1. The affairs of the Corporation shall be managed by a board of fifteen Directors, who shall be chosen only at the annual stockholders' meeting, except as herein otherwise provided. The election of such Directors shall be held as provided by law.

Sec. 2. The Directors named in the certificate of incorporation shall at their first meeting divide themselves by lot into three classes, of five Directors in each class, to serve respectively for one, two and three years.

Sec. 3. In case of a vacancy by death, resignation or otherwise in the Board of Directors between the time of the annual meetings, the remaining Directors shall fill the vacancy or vacancies by choosing as many persons as may be necessary to fill the same, and the person or persons so chosen shall be Directors and hold office until the next annual stockholders' meeting and until their successors are elected.

Sec. 3A. In case there is no Director in the class in which the vacancy occurs under forty-five years of age, the vacancy shall be filled by a person of that age or under. This provision in regard to age may, however, be waived by all of the Directors present at the meeting at which the vacancy is filled.

Sec. 4. Any Director may be removed from his office for cause, and after notice, by an affirmative vote of not less than nine other Directors, and the remaining Directors shall immediately, after such vote, declare the office of such Director vacant, and the vacancy so created shall be filled in the same manner as any other vacancy.

Sec. 5. The annual meeting of the Board shall be held immediately after the annual stockholders' meeting. Other meetings of the Board of Directors may be called by the President, or in his absence by the Vice-President, at any time on not less than three days' notice, and it shall be his duty to call such meeting when so requested by two members of the Board. In case of his refusal or neglect to call a meeting when so requested, any three Directors may call such a meeting. Five Directors shall constitute a quorum at any meeting of the Board.

Sec. 6. The order of business at meetings of the Board shall be as follows:

1. Reading of the Minutes.
2. Report of the Treasurer.
3. Report of the Executive Committee.
4. Reports of Special Committees.
5. Unfinished business.
6. Miscellaneous business.

Sec. 7. No Director as such shall receive any salary or compensation for his services, but this shall not preclude him from holding any other office by appointment of the Board and receiving compensation therefor.

Sec. 8. The Board at its annual meeting shall elect a President, a Chairman of the Board of Directors, a Vice-President, a Secretary, a Treasurer and such other officers as they may deem necessary. One person may hold the office of Treasurer and Secretary, or the office of Treasurer and Vice-President.

Sec. 9. The Board shall also elect proxies to vote the stock owned and held by the Corporation at the next annual stockholders' meeting, and in case the Board shall omit or refuse to elect such proxies at its annual meeting, a special meeting of the Board shall be called for this purpose in advance of the next annual stockholders' meeting, and the Board shall instruct such proxies to vote for such Directors to fill vacancies as may be selected by a majority of the Directors present. The Board may also from time to time elect proxies to vote at special stockholders' meetings as instructed by the Board.

Sec. 10. The Board shall from time to time appoint a manager and such other officers, agents and employees of the Corporation as they may deem necessary. Such officers, agents and employees shall respectively have such powers and perform such duties in the management of the property and affairs of the Corporation as usually pertain to their respective offices, or as prescribed by the Board, subject always to the control of the Board; and the Board may require any such officer, agent or employee to give security for the faithful performance of his duty, and may remove him at pleasure.

Sec. 11. The Board may adopt, and from time to time amend, repeal and add to such rules and regulations for the conduct of their meetings and the management of the affairs of the Corporation as they may deem proper and which are not inconsistent with the laws of the State of New York.

ARTICLE III.

Officers.

Sec. 1. The officers of the Corporation shall be a President, a Chairman of the Board of Directors, a Vice-President, a Treasurer and a Secretary, all of whom shall be members of the Board of Directors except that the President

and Secretary may or may not be members of the Board of Directors. Officers shall be elected by the Directors by ballot to serve for a term of one year and until their successors are elected and qualified. All vacancies occurring in such office shall be filled by the Board for the unexpired term. The Board shall have the power to appoint a trust company to serve as Assistant Treasurer and/or to act as depositary of the funds of the Corporation, to hold office during the pleasure of the Board, with such powers as may be prescribed by the By-laws or by resolution of the Board or of the Executive Committee.

Sec. 2. The President shall be the chief executive officer and head of the Corporation, and during the recess of the Board of Directors and the Executive Committee, shall have the general control and direction of its business and affairs. The President or Vice-President shall sign all certificates of stock issued in the name of the Corporation.

Sec. 3. The Chairman of the Board of Directors shall preside at meetings of the stockholders and of the Board of Directors. In his absence the President or Vice-President shall preside.

Sec. 4. The Treasurer shall have general charge of the investment and safe-keeping of the property and funds of the Corporation, and of the disposition thereof, and shall see that all moneys and securities belonging to the Corporation are deposited with any bank or banks as may be selected by the President and Treasurer, and duly accounted for as provided for in the following section. It shall be the duty of the Treasurer to present a report of the receipts and expenditures of the preceding year, of the funds and assets of the Corporation, and of the manner in which the funds are invested at the annual meeting and at such other times as the Executive Committee may direct.

Sec. 5. The trust company approved by the Board as Assistant Treasurer shall have the following powers and/or duties, among others, to be exercised under the direction of the Treasurer at the discretion of the Board:

(a) The custody and safe-keeping of money and securities belonging to the Corporation, and the collection of income and other moneys due to the Corporation, with power to receipt for the same, and to endorse for deposit all checks payable to the order of the Corporation or the Treasurer.

(b) The disbursement of the funds of the Corporation under the direction of the President or Treasurer or the Executive Committee.

(c) The keeping of proper books of account and rendering statements of receipts and disbursements together with trial balances and such further accountings or statements as may from time to time be called for by the Treasurer or the President.

(d) Such other duties as may be specifically assigned by the Board or by the Executive Committee.

Sec. 6. The Secretary shall keep a stock book, a subscription list book showing the names of the stockholders and the amount of capital remaining to be paid upon their respective subscriptions, and shall also keep a membership book in which shall be entered the names and post office addresses of the stockholders of the Corporation. The Secretary shall also be the transfer agent of the Corporation for the transfer of all certificates of stock, and shall sign all such certificates. He shall also keep the seal of the Corporation and affix the same to all certificates of stock and such other instruments requiring its seal as may be directed by the Board of Directors or the Executive Committee. The Secretary shall also keep the minute book of meetings of the stockholders and Directors, issue notices of meetings, and perform such other duties as may be required by the Board of Directors.

ARTICLE IV.

Committees.

Sec. 1. At the annual meeting of the Board, or as soon thereafter as possible, there shall be elected not exceeding seven Directors to constitute an Executive Committee for the ensuing year; three members of such committee shall constitute a quorum at its meetings.

Sec. 2. The Committee shall have the charge and management of the affairs and business of the Corporation, and during the intervals between the meetings of the Board shall have and exercise all the powers of the Board incident thereto.

Sec. 3. The Committee shall keep minutes of its meetings and submit the same at each meeting of the Board.

Sec. 4. At least two weeks before the annual meeting the President, or in his absence the Vice-President, shall appoint a committee of two Directors to audit the accounts of the Corporation and to report at the next

succeeding annual stockholders' meeting. Such committee shall have power to employ a certified public accountant to make such audit.

ARTICLE V.

Stock.

Sec. 1. Certificates of stock of the Corporation shall not be transferred, sold, assigned or pledged except subject to such limitations and restrictions as may be agreed upon by the stockholders and the corporation, provided, however, that when so authorized such transfer, sale, assignment or pledge shall be made by an endorsement to the proper effect in writing on the back of the certificate, and delivery of such certificate by the transferrer to the transferee, and payment of the transfer tax; but until notice given of such transfer to the Secretary of the Corporation, and the surrender of the outstanding certificate of stock for cancellation, and the payment of the transfer tax, and the issue of a new certificate in lieu of that surrendered, the Corporation may regard and treat the transferrer as being still the owner of the stock.

Sec. 2. All such surrendered certificates shall be marked cancelled, with the date of cancellation, by the Secretary, and each shall be immediately pasted into the stock certificate book opposite the entry of its issue.

Sec. 3. The Corporation shall not purchase its own stock except from its surplus earnings unless such purchase is made for the purpose of the immediate sale and reissue thereof, and no such purchase shall be made if the capital of the Corporation will be thereby impaired.

ARTICLE VI.

Miscellaneous.

Sec. 1. The fiscal year of the Corporation shall begin on January 1 and terminate on December 31.

Sec. 2. No debts shall be contracted or liability incurred or contract made and entered into by and in behalf of this Corporation by any officer or agent thereof unless the same be authorized and directed by the Board of Directors or the Executive Committee.

Sec. 3. The seal of the Corporation shall be in the form of a circle, containing the inscription, Research Corporation, New York, surrounding the inscription, Corporate Seal 1912.

Sec. 4. These By-Laws may be amended at any meeting of the stockholders or of the Board of Directors, as the case may be, by unanimous vote, or, by a two-thirds vote when fifteen days' previous notice of the proposed amendment has been mailed or delivered to each stockholder or Director, provided that no amendment adopted by the Board of Directors regulating the election of Directors or officers shall be valid unless published as required by law. A copy of any amendment to the by-laws shall be sent to each stockholder and each Director within ten days after its adoption.

Sec. 5. There may be an Advisory Board, consisting of such former directors, stockholders and others as the Board of Directors may from time to time elect. The Advisory Board shall be a consultative body only and meetings thereof shall be held when and as requested by the Board of Directors. Copies of the printed reports and other publications of the Corporation shall be sent to members of the Advisory Board.

EXHIBIT D

SEPARATE STATEMENT FOR PERIOD ENDED DECEMBER 31, 1936, SHOWING SALARIES OR OTHER PAYMENTS MADE TO ANY ADMINISTRATIVE OFFICER, SHAREHOLDER OR TRUSTEE, THE REASON FOR SUCH PAYMENT AND THE AMOUNT THEREOF

The administrative officers of the Corporation are as follows:

Officer	Compensation
Chairman of the Board of Directors, Charles A. Stone	None
President, Howard A. Poillon	$28,350.
Vice-President, Dave H. Morris	None
Treasurer, Dave H. Morris	None
Secretary and General Counsel, Lloyd N. Scott	$3,866.64 *
Assistant-Treasurer, Harvey N. Davis	None

No shareholder or trustee has ever received compensation as such. The Corporation owns all of its capital stock.

* The above figure represents Mr. Scott's retainer. In addition he received during 1936 the sum of $150. for special legal work.

EXHIBIT E

RESEARCH CORPORATION

SUMMARIZED STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

FOR THE YEAR ENDED DECEMBER 31, 1936

CASH IN BANKS AND ON HAND - JANUARY 1, 1936		$ 7,759.35
RECEIPTS:		
Royalties and Contracts	$1,346,425.96	
Notes Receivable	590.00	
Miscellaneous Income	5,820.02	
Income from Investments	20,931.94	
Proceeds from Sale or Redemption of Securities	71,786.28	
Total Receipts		1,445,554.20
		$1,453,313.55
DISBURSEMENTS:		
Accounts Payable	$ 832,855.13	
Notes Payable (Net)	20,000.00	
Pay-roll	262,614.00	
Advances for Expenses	141,914.85	
General Expenses, New Projects, etc.	17,143.25	
Investment in Securities	10,050.00	
Awards-		
Smithsonian Institute	20,000.00	
University of California	7,362.00	
Johns Hopkins University	6,000.00	
Massachusetts Institute of Technology	5,000.00	
University of Chicago	4,000.00	
International Auxiliary Language Association	4,000.00	
University of California - Dr. Lawrence	2,550.00	
Montefiore Hospital - Dr. Maliscoff	2,500.00	
Stevens Institute of Technology	1,759.80	
Columbia University	1,250.00	
U. S. Department of Agriculture	1,000.00	
Stanford University	1,000.00	
University of California	901.46	
University of California - Fellowship	500.00	
Research Associates, Inc.	38,400.00	
Total Disbursements		1,380,800.49
CASH IN BANKS AND ON HAND - DECEMBER 31, 1936		$ 72,513.06

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CURRENT ASSETS:		
Cash in Banks and on Hand		$ 72,513.06
Accounts Receivable		319,458.07
Accrued Income on Investments		4,813.06
Inventories		229,958.04
Investments-		
Bonds	$250,002.75	
Mortgage and Mortgage Certificate	94,307.26	
Preferred and Common Stock	39,751.00	
Treasury Stock-		
200 Shares Par Value $100 per share	20,000.00	404,061.01
Total Current Assets		$1,030,803.24
OTHER ASSETS:		
Note Receivable - Western Precipitation Corporation, due beyond December 31,1937		4,289.10
FIXED ASSETS:		
Land	$ 3,083.02	
Buildings and Equipment (less Reserves)	49,247.63	52,330.65
PATENTS:		
Cottrell Process Patents (Book Value)		1,000.00
DEFERRED CHARGES:		
Advances to Employees for Expenses	$ 8,390.48	
Prepaid Insurance	2,584.06	
Investigating New Projects	254,876.67	
Coey Cooling Tower	32,589.66	
		298,440.87
		$1,386,863.86

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PORATION

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1, 1936

LIABILITIES AND CAPITAL

CURRENT LIABILITIES:	
Accounts Payable	$ 81,869.18
Accounts Payable - Western Precipitation Corporation	12,719.13
Notes Payable - Bank Loans	25,000.00
Reserve for Additional Cost of Completed Contracts	19,382.17
Reserve for Awards to Scientific and Educational Institutions, appropriated but unpaid	20,129.89
Advance Payments on Contracts	218,629.44
Account Payable - Officer	11,783.36
Total Current Liabilities	$ 389,513.17
CAPITAL STOCK:	
Authorized and Issued-	
200 shares Par Value $100 per share	20,000.00
SURPLUS HELD AS ENDOWMENT FUND AND WORKING CAPITAL (less awards made during 1936 to scientific and educational institutions - $76,900.00)	977,350.69
	$1,386,863.86

Form 1023
U. S. TREASURY DEPARTMENT
INTERNAL REVENUE SERVICE
(Revised March 1951)

EXEMPTION APPLICATION

FOR USE OF RELIGIOUS, CHARITABLE, SCIENTIFIC, LITERARY, OR EDUCATIONAL ORGANIZATIONS

CLAIMING EXEMPTION FROM FEDERAL INCOME TAX UNDER SECTION 101(6) OF THE INTERNAL REVENUE CODE AND THE CORRESPONDING PROVISIONS OF PRIOR REVENUE ACTS

(To be made only by a principal officer of the organization claiming the exemption)

June 27, 1952
(Date)

I, Joseph W. Barker (Name of declarant), declare under the penalties of perjury that I am the President (Title of declarant—as president, secretary, etc.) of the Research Corporation (Full name of organization), located at 405 Lexington Avenue, New York 17, N. Y. (Complete address, including street and number—post office box, etc.), and that the following answers and statements, including all statements attached hereto, are complete and true to the best of my knowledge and belief:

1. Is the organization incorporated? Yes (Yes or no) If so, under the laws of what State? New York (Name of State)

When? Feb. 26, 1912 (Date of incorporation) If not incorporated, state the manner of organization and the date thereof

2. Is the organization the outgrowth or continuation of any form of predecessor? No (Yes or no) If so, state the name of such predecessor and the period during which it was in existence

3. Has the organization filed Federal income tax returns? _____ (Yes or no) If so, state return form number and year or years. No, but it has filed Forms 990 and 990-A as required.

4. State briefly the specific purposes for which the organization was formed. (Do not quote from, or make reference to, the articles of incorporation or bylaws for this purpose.) Advancement of science. See Memorandum attached hereto and made a part hereof.

16—16187-7

5. Is the organization authorized to issue capital stock? Yes (Yes or no) If so, state (1) the class or classes of such stock, (2) the number and par value of shares of each class outstanding, and (3) the consideration paid for outstanding shares 200 shares of the par value of $100. each, all owned by the corporation. No dividends may be paid on the stock.

6. If capital stock is outstanding, state whether any dividends or interest has been or may be paid thereon ____ (Yes or no) If so, give facts in detail All of the capital stock is owned by the corporation.

7. If any distribution of corporate property of any character has ever been made to shareholders or members, attach hereto a separate statement containing full details thereof, including (1) amounts or value, (2) source of funds or property distributed, and (3) basis of and authority for distribution. In 1915 the Corporation repurchased its stock from original stockholders.

8. State all sources from which the organization's income is derived See attached Memorandum.

9. Does any part of the receipts represent payment for services of any character rendered by the organization? Yes (Yes or no) If so, explain in detail See attached Memorandum

10. State all the activities in which the organization is presently engaged. (Explain in detail, using additional sheets as required—See footnote.) See attached Memorandum

11. What, if any, specific activities of the organization have been discontinued? (Explain fully, giving dates of commencement and termination and the reason for discontinuance.) None

12. Is the organization now, or has it ever been, engaged in carrying on propaganda, or otherwise either advocating or opposing pending or proposed legislation? _____ (Yes or no) If so, furnish a detailed explanation of such activities, and furnish copies of literature, if any, distributed by the organization. (Use additional sheets as required—See footnote.) No except that on behalf of the corporation, its officers asked the New York State Legislature to ratify its incorporation and Chapter 523 of the New York Laws of 1932 was enacted. See attached Memorandum.

13. (a) For what purposes, other than in payment for services rendered or supplies furnished, are the organization's funds expended? Grants for scientific research.

(b) If any payments are made to members or shareholders for services rendered the organization, attach a separate statement showing the amounts so paid and the character of the services rendered.

14. Does any part of the net income of the organization inure to the benefit of any private shareholder or individual? No

15. If the organization is a hospital, attach a separate statement showing the number of full-pay, the number of part-pay, and the number of nonpay patients treated during the last complete year of operation.

16. In the event of the dissolution of the organization, what disposition would be made of its property? As the court may direct, to purposes as nearly like those of the corporation as possible.

17. After July 1, 1950, did—

The creator of your organization, or
A contributor to your organization, or
A brother or sister (whole or half blood), spouse, ancestor, or lineal descendant of such creator or contributor, or
A corporation owned (50 percent or more of voting stock or 50 percent or more of value of all stock) directly or indirectly by such creator or contributor

(a) Borrow any part of your income or corpus? . . . . . No (Yes or no)

(b) Receive any compensation for personal services from you? . . . . . No (Yes or no)

(c) Have any part of your services made available to him? . . . . . No (Yes or no)

(d) Purchase any securities or other property from you? . . . . . No (Yes or no)

(e) Sell any securities or other property to you? . . . . . No (Yes or no)

(f) Have any part of your income or corpus diverted to him by any transaction? . . . . . No (Yes or no)

If answer to any question is "yes," attach detailed statement.

16—16127-7

18. Attach to this application a classified statement of the receipts and expenditures of the organization during the last complete year of operation and a complete statement of the assets and liabilities as of the end of that year; a copy of the articles of incorporation, if incorporated, or if not incorporated, a copy of the constitution, articles of association, declaration of trust, or other document setting forth the aims and purposes of the organization; and a copy of the bylaws, or other similar code of regulations. If exemption is claimed as an exclusively educational organization and a regular curriculum and faculty are not normally maintained and a regularly organized body of pupils or students is not normally in attendance at the place where the educational activities are regularly carried on, there should also be attached specimen copies of any books, pamphlets, leaflets, or other printed matter issued or distributed during the latest complete year of operations.

June 27, 1952

Joseph W. Barker
(Signature of officer making declaration)

(If the space provided for the insertion of information or data under any of the above questions is inadequate for the purposes, additional sheets may be used which should be properly identified and securely attached hereto.)

IMPORTANT

A mere claim or contention by an organization that it is exempt from income tax under section 101 of the Internal Revenue Code and the corresponding provisions of prior revenue acts will not relieve the organization from filing income tax returns and paying the tax. Unless the Commissioner has determined that an organization is exempt, it must prepare and file a complete income tax return for each taxable year of its existence. Accordingly, every organization that claims to be exempt should furnish the information and data specified herein, together with any other facts deemed material to the question, with the least possible delay, in order that the Commissioner can determine whether or not it is exempt. As soon as practicable after the information and data are received, the organization will be advised of the Commissioner's determination, and, if it is held to be exempt, no further income tax returns will be required.

U. S. GOVERNMENT PRINTING OFFICE 16—16137-7

MEMORANDUM ON THE

ORGANIZATION AND ACTIVITIES

of

RESEARCH CORPORATION

CONTENTS

Brief Statement of Research Corporation
Form of Organization
Problem
Corporate History and Facts
Other Activities and Income of the Corporation
Grants for Research

EXHIBITS ATTACHED

Exhibit A - Certificate of Incorporation
" B - Chapter 523 of the Laws of New York, 1932
" C-1- Ruling on Tax Exemption
" C-2- " " " "
" C-3- " " " "
" C-4- " " " "
" C-5- " " " "
" C-6- " " " "
" C-7- " " " "
" D - "Better Health Through Better Rice" pamphlet.
" E - Financial Statements
" F - Scientific paper
" G - List of Grants made during fiscal year ended October 31, 1951.

MEMORANDUM ON THE ORGANIZATION AND ACTIVITIES OF RESEARCH CORPORATION

Brief Statement on Research Corporation

Research Corporation is a nonprofit corporation which is devoted to the advancement of science through experimentation with and development of inventions and patents and their introduction into the useful arts and manufactures, and through contributions to provide means for the advancement and extension of technical and scientific investigation, research and experimentation by scholars and scientists through the agency of the Smithsonian Institution and such other scientific and educational institutions as the Board of Directors may select.

Form of Organization

Research Corporation was organized under the Corporation laws of New York State, in 1912, for the purpose of aiding and encouraging technical and scientific research. Its certificate of incorporation forbids any dividend ever to be declared or paid on its stock. A photostatic copy of this certificate of incorporation is attached as Exhibit A.

This non-dividend-bearing stock of Research Corporation was issued under a stockholders' agreement providing that the stock was to be repurchased by the Corporation. By 1915 all the stock had been so repurchased,

and two new certificates issued in the name of the Corporation, which holds all its stock in its treasury.

The educational and scientific purposes and organization of, and limitations upon, the Corporation were frozen into a legislative charter by Chapter 523 of the Laws of New York for 1932. A photostatic copy of this statute is attached as Exhibit B.

The Bureau of Internal Revenue has continuously ruled, beginning in 1915, that the Corporation is exempt from income tax as an educational and scientific organization. The ruling made in 1944 was reviewed by the Chief Counsel for the Bureau. The list of such rulings (photostatic copies of which are attached as Exhibits C-1 to C-7) is as follows:

Date of Ruling	Exhibit No.	Scope
February 1, 1915	C-1	Corporate income tax.
September 28, 1934	C-2	Revenue Act of 1932, s.103(6); "corresponding provisions of prior revenue acts"; "Taxes...under other titles or provisions of the...revenue acts,...in so far as exemption is granted expressly under those provisions to organizations enumerated in section 101 of the Revenue Act of 1934 and the corresponding provisions of the Revenue Act of 1932 and 1928"; Revenue Act of 1934, s.23(o) (deductibility of contributions to Corporation); "Corresponding provisions of the Revenue Acts of 1932, and 1928" (Deductibility of contributions to Corporation); Revenue Act of 1934, s.101(6);

3.

Date of Rulings	Exhibit No.	Scope
October 3, 1935	C-3	Revenue Act of 1934, s.701(c)(1) (capital stock tax);
May 4, 1938	C-4	Revenue Act of 1936, s.101;
June 18, 1941	C-5	Revenue Act of 1938, s.101(6); "Internal Revenue Code for 1938 and subsequent years", s.101(6); "Internal Revenue Code, s. 1201(a)(1)(capital stock tax); Internal Revenue Code, ss. 1426, 1607 "and/or corresponding provisions of the Social Security Act"; Internal Revenue Code, ss. 23(o), 23(q) (Contributions to Corporation); "Corresponding provisions of prior revenue acts"; Internal Revenue Code, ss.812 (d), 861(a)(3) (estate taxes); "Corresponding provisions of prior revenue acts"; Internal Revenue Code, ss.1004 (a)(2)(B),1004(b)(2,3) (gift taxes); "Corresponding provisions of prior revenue acts";
August 25, 1944	C-6	Internal Revenue Code,s.101(6); "Corresponding provisions of prior revenue acts"; Internal Revenue Code,s.1201 (a)(1) (capital stock tax); Internal Revenue Code,ss.1426, 1607 "and/or corresponding provisions of the Social Security Acts"; Internal Revenue Code, ss.23 (o) 23(q) (contributions); "Corresponding provisions of prior revenue Acts"; Internal Revenue Code, ss.812 (d), 861(a)(3) (estate taxes); "Corresponding provisions of prior revenue acts";

Date of Rulings	Exhibit No.	Scope
August 25, 1944 (continued)	C-6	Internal Revenue Code, ss. 1004 (a)(2)(B), 1004(b)(2,3) (gift taxes); "Corresponding provisions of prior revenue acts";
December 11, 1951	C-7	Internal Revenue Code, s.101 (6)

A special questionnaire was filed in 1937 and returns on forms 990 and 990A have also been filed regularly as required by statute.

Problem

The problem is whether the Corporation's income from its Precipitation Division must be considered "unrelated business net income" under the Revenue Act of 1950 and so be subject to Federal income tax. The obvious effect of such a tax, of course, will be to deprive educational and scientific institutions and scientists of the amount of money collected as taxes.

The pertinent portions of the amended Internal Revenue Code are Sections 421(a)(1); 421(c), 422(a) and 422 (b). The particularly pertinent portions of the proposed regulations are Sections 29.422-1(a) and 29.422-3(a).

Corporate History and Facts

Research Corporation was created by the late Dr. Frederick Gardner Cottrell. Prior to 1907 Dr. Cottrell had invented and done experimental pilot plant work on processes for the separation and collection of dusts, mists and fumes

from gases by the use of electricity ("electrical precipitation"), and he took out patents on his invention and on relevant apparatus.

After the organization of two small commercial companies which made the first industrial installations of precipitation apparatus, Dr. Cottrell began attempts to turn over to scientific research the major part of monetary returns from his patented processes. His first thought was to turn the patent rights over to the University of California, but he rejected this plan because he felt it might lead indirectly to industrial control of the University and of academic research. He next thought of the American Chemical Society, but rejected this agency because of its youth and lack of specialized experience with patents. Then after discussions with Dr. Charles D. Walcott, Secretary of the Smithsonian Institution, and Dr. Joseph A. Holmes, Director of the Bureau of Mines, he joined the staff of the Bureau and began efforts to turn the patent rights over to the Smithsonian. After careful consideration, the Smithsonian decided that it could not administer and develop the patents properly, and Dr. Cottrell therefore turned to philanthropy to secure the capital necessary to carry out the charitable purpose which he proposed. Discussions with public-spirited individuals led to enthusiastic response from a number of persons who agreed to advance the necessary funds and the result was the formation of Research Corporation under the Corporation

Laws of the State of New York.

Dr. Cottrell felt that there should be a proper link between technical discoveries made in universities and their application to industrial need on the outside. He believed that ideas born in academic laboratories could be turned over to an institution such as the corporation he proposed when they reached a certain stage and through further development by that body be carried over into the industrial field. He wished to eliminate the waste of intellectual by-products in our colleges and technical laboratories.

Having this in mind, Dr. Cottrell and the men who founded the Corporation were sufficiently farsighted not to confine its possibilities for public benefit to the development of the art of electrical precipitation alone. The certificate gave the Corporation the power to receive by gift or purchase inventions, patent rights and letters patent to develop them, to experiment and test their validity and value and to render them more available and effective in the useful arts and manufactures and for scientific purposes. Research Corporation was thus enjoined with the duty of introducing inventions into use in science and useful arts and devoting the proceeds to academic and scientific research.

It was soon discovered that the precipitation patent rights so held by the Corporation would not yield

their true value and might fail to receive proper widespread acceptance if their introduction into use was confined to the licensing and making available the results of its engineering research and experience. Companies objected to the Corporation's interference in their affairs, either through the continuing presence of its employees in their plants or the charging of royalties on day-to-day use of the apparatus covered by the patents. Since the art of precipitation was so new, much of the apparatus required was of a quasi-experimental nature, requiring the closest of scientific and technological planning and supervision, which the Corporation was in a much better position to handle than were its licensees. Finally, the further development of the applications of precipitation had to be conducted on a basis of slow practical experience, gathered together in one organization, in order to make the art as a whole available in the widest possible manner.

The Corporation therefore commenced, as early as 1918, to supply to its licensees the special electrical equipment that the precipitation processes require, at first on purchase orders to electrical companies, and then in part in its own plant. To this it added gradually the planning, engineering and production of the various other component elements of complete precipitators until today (and for some time past) it serves as an active engineering and production organization which designs, builds, installs, places in operation and guarantees Cottrell Electrical Precipitation Apparatus.

The Corporation has carried on both basic and applied research and development work, which has brought the art of precipitation to the stage where it may now be successfully applied to the cleaning of gases in a great number of fields. Broadly speaking, its application usually serves one of three functions: (a) the collection of a waste material which would otherwise constitute a neighborhood nuisance (collection of fly-ash from pulverized fuel boiler stack gases is an excellent example); (b) the recovery of material of value, which would otherwise be lost (the expensive clay catalyst used in high-octane gasoline refineries may be cited); or (c) the cleaning of a gas so that it may be more effectively used (as the detarring of carburetted water gas intended for fuel, to avert clogging of the burners). Many applications, of course, involve more than one of these functions.

Development of the Cottrell Processes entails the sale, design, ordering of materials for fabrication, shipment, erection, placing in operation and testing of a large device (precipitator) which consists essentially of a chamber in which are suspended negative and positive electrodes charged from electrical (substation) equipment furnished with the precipitator, through which gases laden with particles or mists are passed for the electrostatic deposition and removal of the particles or mists. The larger part by far of the

Corporation's activities in the precipitation field were located at Bound Brook, New Jersey, until 1950, when they were transferred to a new and larger plant at Finderne, New Jersey.

Inquiries for precipitation equipment are received in the Finderne, and the New York and Chicago offices. After basic engineering plans are drawn up and an estimate of selling price is made, contracts are entered into for delivery and erection. The contract is then placed in work at the Finderne plant for detailed engineering, purchasing of materials or parts, fabrication, and shipment to the erection site.

Goods ordered from suppliers, whether specially fabricated or not, may undergo further processing at the New Jersey plant, if they are shipped there. A very substantial item on every job, however, is the steel or other structural portion (including electrodes) of the precipitator which is usually fabricated by an iron and steel shop convenient to the plant site. This material runs from 8 to 150 tons on a given installation.

During this process of ordering and fabrication there is continuous engineering of the job going on at the New Jersey plant.

Upon the assembling of the necessary materials at the site of the job, the New Jersey plant sends to the site of the job an "erection engineer". An "erection engineer" works

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entirely under the supervision of the New Jersey plant. He establishes an office in a work shanty or elsewhere; hires local labor either (a) directly, (b) through the customer's hiring office, or (c) through the local union hiring hall; establishes a bank account for payroll and local purchase purposes; opens social security records; checks work permits, etc. under local ordinances; and proceeds to supervise the erection of the installation.

Upon completion of the job, one or more testing engineers are dispatched by the New Jersey plant to the job. The testing engineer is entirely under the control of and reports to the New Jersey plant. The customer actuates the apparatus supplying the gases to be processed, the testing engineer turns on the precipitator, and then necessary adjustments are made by the testing engineer to obtain the desired efficiency in operation. Following such adjustments the testing engineer conducts a test of the precipitator, in accordance with a routine procedure designed to demonstrate that the precipitator is operating in accordance with the guarantee expressed in the contract. Upon completion of his work, the New Jersey plant sends a notice to the customer that the installation is operating in accordance with the guaranteed performance.

The contract provides with great particularity that certain conditions, services or items are to be supplied

11.

by the customer, and certain items are to be supplied by Research Corporation. Roughly speaking, the customer is required to provide certain operating conditions, a foundation for the precipitator, a substation building, and apparatus adjunct to but not including either the precipitator or the electrical equipment (such as supports for high tension lines, flues and compressed air lines). The installation is always a fixture attached to the realty. In accordance with its proposal, Research Corporation furnishes the precipitator and erects it, and guarantees its efficiency and its materials.

The design, fabrication and installation of Cottrell Electrical Precipitation Apparatus is a business activity, and competes with commercial industry. But no claim can be made that the Corporation has utilized its tax-exempt position as a tool of competition. The Corporation every month loses a very substantial volume of precipitation construction contracts to private profit competitors on a strictly competitive price.

The concern of Congress in enacting the 1950 amendments was with events that had recently occurred, - the spread of tax avoidance by business organizations which had formerly been operating and competing as taxpayers. In its concern with competition the Committee was clearly thinking about recent and prospective manipulative changes in competitive status, rather than established revenue sources of long-recognized charitable institutions.

The Revenue Act of 1950 did not attempt to levy a tax on all business activities. Rather the Supplement U tax was aimed only at unrelated business activities. Code Section 422 defines the term "unrelated trade or business" to mean "any trade or business the conduct of which is not substantially related (aside from the need of such organization for income or funds or the use it makes of the profits derived) to the exercise or performance by such organization of its charitable, educational or other purpose or function constituting the basis for its exemption under Section 101". Under the provisions of Section 29.422-3(a)(4) of the proposed regulations, a business is "substantially related to the activities for which an organization is granted exemption if the principal purpose...is to further the purpose for which the organization is granted exemption."

The basic underlying "purpose or function" for which Research Corporation was founded is the advancement and extension of technical and scientific investigation for research and experimentation. The Corporation was set up to introduce inventions into use for science and the useful arts, and to finance academic scientific research on an eleemosynary basis. Its major initial asset was certain patent rights covering an entirely new field of electrical phenomena. It introduced them into use, at first by licensing, and then by building and selling them.

13.

In keeping with the injunction of its charter that it constantly experiment with and test the validity and value of the inventions entrueted to it, and render them more valuable and effective in the useful arts and manufactures and for scientific purposes, the Corporation has continuously carried on programs directed both to the basic phenomena of electrical precipitation, (which are not as yet entirely understood) and to the discovery of new methods in which it can be made useful. This experimentation entails abstract research of the wholly academic type, carried on in the Corporation's laboratories, where the only end product will be a better understanding of the functioning of electrical laws. An example is the formulation of the pure theory covering the characteristic ability or inability of a given material to be ionized by a given electrical charge. It aleo entails such successful developments as assisting the nation by demonstrating that electrical precipitation could be used to recover high octane gasoline catalyst and carbon black, when both were in such critically short supply as to threaten the war effort.

The great increase of atmospheric pollution in the urban areas of this country is a problem of growing and major importance. Since the solution, from a technological standpoint, is still largely unknown, the Corporation is increasingly directing its research activities to that question, in

order to learn how useful the art of electrical precipitation may be in solving it. At the present time, probably in excess of 1,500,000 tons of contaminants each year are prevented from getting into the atmosphere as a direct result of the Corporation's work.

Electrical phenomena are currently being investigated by the Corporation at the request of the Federal Government in connection with activities which are classified for reasons of military security, for which reason the Corporation cannot indicate their nature.

Just as (to use the Bureau's illustrations in the proposed regulations) an agricultural education program is served by a "teaching" wheat farm, or an education program is served by a "teaching" radio station, so the purpose of introducing new inventions into use, to aid science and the useful arts initially, and then aid science again by grants of the net earnings is here served by doing precisely that thing with the art of electrical precipitation.

The Precipitation Division of Research Corporation, therefore, is not such a business as was intended to be included within the definition of "unrelated trade or business."

Other Activities and Income of the Corporation

Direct research by the Corporation in other fields has had strikingly gratifying results. For centuries beri-beri has been one of the chief fatal diseases in countries where the

principal diet is polished rice. Using funds from its Williams-Waterman Fund for the Combat of Dietary Diseases, the Corporation conducted a large-scale experiment in Bataan Province, the Philippines, to see whether enrichment of white rice with thiamine, niacin and iron would help to control beri-beri. In the first full year of the experiment beri-beri deaths fell 67.3% and infants deaths 50%. In the last three months of the experiment the death rate from beri-beri was zero. 90% of the people who had had beri-beri two years before became symptom-free. These results are so startling that the Philippines Government is putting into effect a plan for compulsory enrichment of all polished rice consumed in the Islands. At the suggestion of the Corporation the governments of the other rice-eating countries are devoting their attention to the problem, with the cooperation of our own Government. A booklet, "Better Health Through Better Rice", which gives the details of this noteworthy research work by the Corporation in non-technical language, is attached as Exhibit D.

During the coming fall and winter the Corporation proposes to carry on somewhat similar investigations and research in Central and South America.

It is, of course, a source of great pride to Research Corporation that much of the basic synthesis of Cortisone was achieved at the Mayo Clinic by Dr. Edward C. Kendall, who was able to do this work because of a long series of grants by

the Corporation. Dr. Kendall is continuing his extremely important researches on adrenal cortex hormones at the James Forrestal Research Center as a direct research project by the Corporation.

Aside from the precipitation income, all of the Corporation's income is in the form of dividends and interest on securities, gains from their sale or exchange, and royalties. The Corporation has continued as heretofore its patent program in cooperation with universities and other educational, scientific and quasi public institutions substantially as disclosed in prior applications.

Because the Corporation is a scientific and charitable corporation not operated for private profit, it has been possible for it to combine its patent ownership as a source of royalties with the development of the processes involved in the public interest, and, especially in the case of the medical patents, to prevent the misuse of the product so that the health of the public can be protected.

The subsidiary corporation, Research Construction Company, Inc., has continued to operate as disclosed in prior applications.

Attached hereto as Exhibit E are (1) balance sheet of the Corporation as of October 31, 1951, (2) statement of appropriated and unappropriated surplus for that year, and (3) statement of income and expenses for the fiscal year ended October 31, 1951.

Grants for Research

From its income received from all sources, Research Corporation makes the allocations for individual researches, principally in the physical sciences. Projected work of

essentially pioneering nature is eligible under the General Grants program; programs intended to foster research in smaller institutions comes under the Cottrell Grants. Work in the field of nutrition is considered for the Williams-Waterman program; and research in the field of endocrinology is subject to inclusion in the Kendall-Hench program.

In considering applications for grants, the scientific merit of the proposed research, the qualifications of the research worker and the adequacy of the facilities and the need for support of research at the institution are the sole criteria. The prospect, if any, of a valuable invention being derived from the work is not considered; if a grant is made, no stipulation as to disposition of any resulting invention is involved.

Since 1912, Research Corporation has distributed nearly $7,000,000 in the form of grants in aid of research. These grants have played a significant part well beyond their dollar value in specific accomplishment, in the general advancement of scientific knowledge and in the training of young scientists.

Research Corporation has no rigid formulae regarding the fields of research in which it makes grants. In former years, its major grants were principally made in the field of physical science and engineering. In more recent years there has been an extension into certain aspects of the

biological sciences, chiefly those related to deficiency diseases. As long as 30 years ago the Corporation supported low temperature studies; today its grants assist researchers working on superconductivity, superfluidity and super sound. The first cyclotron received its first outside help from these grants in the early 1930s, and grants which would be but drops in the bucket today aided at early, critical stages the construction of these instruments at a half dozen institutions in the 1930s. In a 1939 report on work done under Research Corporation grants there is a reproduction of one of the first oscillographic records of energy release in uranium fission. The Corporation's funds supported the construction of the first coronographs in this country and played an important part in the successful development of the present major installations of these devices in the western mountains.

Ultracentrifuges, mass spectographs, linear accelerators and the Van de Graaff generator received Research Corporation support at stages of their development when lack of funds might well have meant their abandonment, or deferral for years. Steroid chemistry, various pharmaceuticals, free radical chemistry, a microbalance, towing tanks, wind tunnels, photosynthetic studies, heat transfer and molecular beam experiments have received support that was important more for its timing rather than its absolute amount in dollars. The world-wide significance of such work is pointed by the fact that it has led to the award of at least three Nobel Prizes.

The most dramatic results from use of these funds in recent years, apparent already in terms of human lives saved, is the rice enrichment program supported by the Williams-Waterman Fund in the Philippine Republic. In this area where beriberi is second only to tuberculosis as a killer, the formerly unconquered disease has been eradicated in the experimental areas where the nutritional measures were introduced. Hundreds of other grants have assisted projects that have served to advance the frontiers of science in many directions.

In terms of definite results, research projects such as those currently supported by Research Corporation are frequently hard to assay within years or even decades of the actual work. However, helpful evidence accumulates fairly rapidly in the form of publications, inventions and recognition by others of the contributions being made by those who have received the Corporation's grants. There is now in Research Corporation's files the foundation for a respectable scientific library consisting of undergraduate, M.S. and Ph.D. theses; reprints of publications carrying credit lines to Research Corporation from virtually all the country's scientific journals; detailed technical reports; and word of advanced degrees, Guggenheim and other fellowships -- all of which stemmed at least in part from work done under the Corporation's grants. Attached hereto as Exhibit F is one of the innumerable scientific papers research for which was financed by the Corporation.

The statement in footnote (1) of the paper that "the work on this paper was made possible by a grant-in-aid from the Research Corporation" is familiar to readers of scientific journals.

After the war Research Corporation was much concerned with the problem of restoration of research in schools of learning and especially in smaller colleges and universities. In many instances, able research men had been drawn into war activities either in the military services or in war research groups under Government auspices. It was of utmost importance to the future of scientific education in America that provision be made for the return of a maximum number of these men to the institutions of their former attachments or similar ones. In some instances, the funds of educational institutions were insufficient for the full discharge of the responsibilities thrust on them by the historic events of recent years. In such cases, research was peculiarly liable to suffer. Research Corporation, accordingly, formulated a policy of grants in aid of research specifically designed to meet this situation.

The extent of the grants made since the war is as follows:

Year	Number of Grants	Total Dollar Amount
1946	148	$ 156,195
1947	153	692,398
1948	153	696,935
1949	312	1,195,796
1950	320	1,076,726
1951	278	820,322

It is difficult to evaluate in precise figures the social impact of such grants. Wholly aside from the scientific and technological values which have resulted, however, some of the products of the work which has been carried on have enormous basic importance.

In October, 1948, a woman so crippled by rheumatoid arthritis that she had been virtually unable to leave her bed walked down a hallway in the Mayo Clinic. On April 20, 1949, four doctors announced that the injections given her, of 17-hydroxyl-11-dehydrocorticosterone, "cortisone", had produced striking results in fourteen other cases. On August 16, 1949, the Federal Security Agency announced that the Agency and the Department of Agriculture were sending out expeditions to search for new sources of starting materials for the compound, at the written request of the President. "This may be to chemistry what the atomic bomb was to physics", the Administrator was quoted as saying. On January 29, 1951, the Public Health Service allotted $2,000,000 in grants for research on cortisone and similar substances. On March 10, 1950, Drs. Edward C. Kendall, Philip S. Hench and Tadeus Reichstein received the Nobel Prize in Medicine for their work in the synthesis and application of cortisone. The key steps in its synthesis were carried out by Dr. Kendall, under a series of grants from Research Corporation, at a long prior time when there was no inkling whatever of what the ultimate result would be, and no other support available.

In keeping with its mandate to render inventions more useful for the public good, the Corporation has continued to make grants to outstanding scientists in several universities in an effort to arrive at a total synthesis of cortisone to remove it from dependence on scarce natural starting materials and make it more plentiful and cheaper.

In the decade ended October 31, 1951, the Corporation made 1,499 grants for scientific research. In order to show the particular nature of the grants made in the fiscal year ended October 31, 1951, we have listed the names of the scientists who headed the research, the dollar amount of each grant, the names of the institutions through which the grants were made, and the subject of the research. This list is appended as Exhibit G and is divided into three parts, the first of which covers the Corporation's general program of grants, the second of which covers the Frederick Gardner Cottrell Grants, and the third of which covers grants made from The Williams-Waterman Fund for the Combat of Dietary Diseases.

If there is the slightest question in the Bureau of Internal Revenue as to the importance, efficacy, or results of the Corporation's program of grants, it is suggested that the Bureau itself communicate with the heads of the institutions where work has been carried on under grants and ask them their opinion and that of the scientists who conducted the research, as to the scientific, social, and educational value of the support granted by the Corporation.

Research Corporation

Certificate of Incorporation

THIS IS TO CERTIFY, that we the undersigned, all being persons of full age and all citizens of the United States, and all of whom are residents of the State of New York, desiring to form a stock corporation, for the purpose of aiding and encouraging technical and scientific research as hereinafter more particularly described, pursuant to the provisions of the General Corporation Law, the Business Corporations Law and the Stock Corporation Law of the State of New York, do hereby make, sign, acknowledge and file the following certificate:

FIRST: The name of the proposed corporation shall be

"RESEARCH CORPORATION."

SECOND: The purposes of the proposed corporation are:

(*a*) To receive by gift and to acquire by purchase or otherwise, inventions, patent rights and letters patent either of the United States or foreign countries, and to hold, manage, use, develop, manufacture, install and operate the same, and to conduct commercial operations under or in connection with the development of such inventions, patent rights and letters patent and to sell, license, or otherwise dispose of the same, and to collect royalties thereon, and to experiment with and test the validity and value thereof, and to render the same more available and effective in the useful arts and manufactures and for scientific purposes and otherwise.

(*b*) To provide means for the advancement and extension of technical and scientific investigation, research and experimentation by contributing the net earnings of the corporation, over and above such sum or sums as may be reserved or retained and held as an endowment fund or working capital, and also such other moneys and property belonging to the corporation as the Board of Directors shall from time to time deem proper, to the Smithsonian Institution, and such other scientific and educational institutions and societies as the Board of Directors may from time to time select in order to enable such institutions and societies to conduct such investigation, research and experimentation.

(*c*) To receive, hold and manage, and dispose of such other moneys and property, including the stock of this and of any other corporation, as may, from time to time, be given to or acquired by this corporation in the furtherance of its corporate purposes, and to apply the same and the proceeds or income thereof, to the objects specified in the preceding paragraph.

THIRD: The amount of the capital stock is Twenty thousand dollars ($20,000), and the amount of capital with which the corporation shall begin business is One thousand dollars ($1,000).

FOURTH: The number of shares of which the capital stock shall consist is Two hundred (200) of the par value of One hundred dollars ($100) each. No dividends shall be declared or paid thereon, and the entire net profits earned by said capital stock shall be applied to or expended for the aforesaid purposes.

FIFTH: The principal office and place of business of the corporation is to be located in the Borough of Manhattan, City, County and State of New York, but it shall have power to carry on its work, and do business in any state, territory or dependency of the United States, or in the District of Columbia, or in any foreign country.

SIXTH: The duration of the corporation shall be perpetual.

SEVENTH: The number of Directors of the corporation shall be fifteen, and they need not be stockholders. They shall have power to manage the affairs of the corporation, to make, amend and repeal such by-laws and regulations not inconsistent with the laws of this State or the United States, as they deem proper, and to appoint and employ such officers and employees as they consider necessary; and they may by by-laws or resolutions designate five or more Directors as an Executive Committee, with power to exercise all the rights and perform all the duties of the Board, which may be lawfully delegated in the management of the business of the corporation.

EIGHTH: The names and post-office addresses and places of residence of the Directors for the first year are:

NAMES.	P. O. ADDRESSES AND RESIDENCES.
William L. Dudley,	Nashville, Tennessee.
T. Coleman du Pont,	Wilmington, Delaware.
Frederick A. Goetze,	411 West 117th Street, New York City.
Elon H. Hooker,	512 Fifth Avenue, New York City.
Hennen Jennings,	Washington, District of Columbia.
Charles Kirchhoff,	244 Riverside Drive, New York City.
Benjamin B. Lawrence,	170 West 59th Street, New York City.
Arthur D. Little,	Brookline, Massachusetts.
John B. Pine,	24 Gramercy Park, New York City.
Lloyd N. Scott,	11 East 44th Street, New York City.
Charles A. Stone,	Plymouth, Massachusetts.
James J. Storrow,	Boston, Massachusetts.
Elihu Thomson,	Swampscott, Massachusetts.
Charles D. Walcott,	Washington, District of Columbia.
Mark S. Reardon, 3rd,	170 Keap Street, Brooklyn, N. Y.

NINTH: The said Directors shall, at their first meeting, classify themselves with respect to the time for which they shall severally hold office by dividing themselves into three classes, each consisting of one-third of the whole number of the Board of Directors. The Directors of the first class shall serve for a term of one year; the Directors of the second class for a term of two years; and the Directors of the third class for a term of three years; and at each annual election the successors to the class of Directors whose term shall expire in that year shall be elected to hold office for the term of three years, so that the term of office of one class of Directors shall expire in each year.

TENTH: The names and post-office addresses and places of residence of the subscribers and the number of shares which each agrees to take in the corporation are as follows:

NAMES.	ADDRESSES.	SHARES.
Frederick A. Goetze,	411 West 117th St., N. Y. City,	Three.
Elon H. Hooker,	512 Fifth Ave., N. Y. City.	Four.
Charles Kirchhoff,	244 Riverside, N. Y. City.	Three.

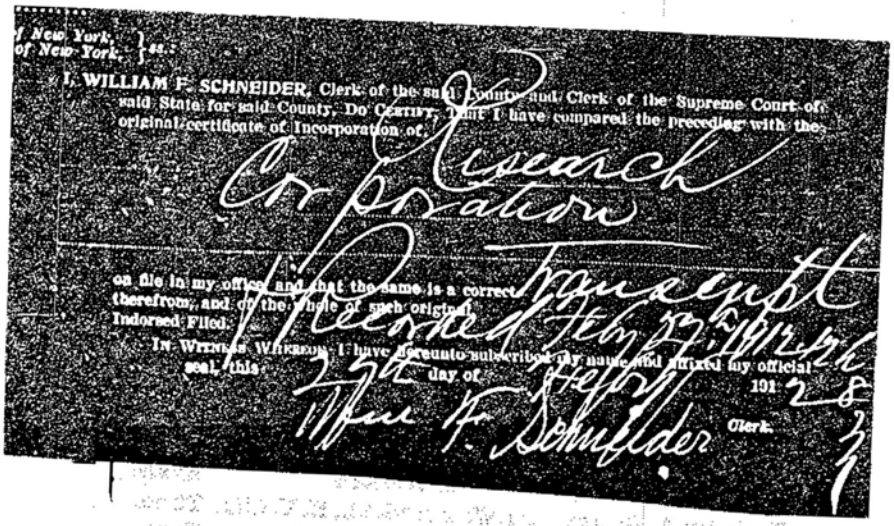
IN WITNESS WHEREOF, the undersigned have executed this certificate the 16th day of February, 1912.

FREDERICK A. GOETZE,
ELON HUNTINGTON HOOKER,
CHARLES KIRCHHOFF.

STATE OF NEW YORK, }
COUNTY OF NEW YORK, } ss.:

On this 16th day of February, 1912, before me personally came FREDERICK A. GOETZE, ELON HUNTINGTON HOOKER and CHARLES KIRCHHOFF, to me known to be the individuals described in and who executed the foregoing Certificate of Incorporation, and severally acknowledged that they executed the same.

LLOYD N. SCOTT,
Notary Public,
Reg. 3065. New York County.
County Clerk 110.



State of New York,
County of New York, } ss.:

I, WILLIAM F. SCHNEIDER, Clerk of the said County and Clerk of the Supreme Court of said State for said County, Do Certify, That I have compared the preceding with the original certificate of Incorporation of

Research Corporation

on file in my office and that the same is a correct transcript therefrom, and of the whole of such original.

Indorsed: Filed Feb 27 1912

In Witness Whereof, I have hereunto subscribed my name and affixed my official seal, this 28th day of February 1912

William F. Schneider Clerk.

CHAPTER 523

AN ACT to ratify the incorporation of Research Corporation, to ratify and approve acts and proceedings taken in its behalf including the holding of its own capital stock and to ratify and provide for the election of its directors

Became a law March 30, 1932, with the approval of the Governor. Passed, three-fifths being present

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Research Corporation, formed by the filing of its certificate of incorporation in the office of the secretary of state on the twenty-sixth day of February, nineteen hundred twelve, shall be deemed and held and is hereby declared to be a valid corporation.

Deemed valid corporation.

[1] Following two sentences new

tion, from the time of the filing of said certificate of incorporation in the office of the secretary of state as aforesaid, governed and regulated so far as applicable by the provisions of the business corporations law as then existing and the later laws enacted in amendment thereof or in supplement thereto or in substitution therefor, and duly organized and existing for the purposes and with the powers (which shall be deemed to include the power to hold all of its own capital stock) set forth in said certificate of incorporation.

Acts of corporation legalized.

§ 2. All acts and things heretofore done, and proceedings heretofore had or taken by or on behalf of Research Corporation are hereby ratified, legalized and confirmed, including the acts of said corporation in repurchasing from its stockholders all of the outstanding shares of its capital stock and in thereafter holding said shares of stock.

Election and acts of directors legalized.

§ 3. The election of C. G. Abbot, Harvey N. Davis, Frederick A. Goetze, Hamilton Hadley, Elon H. Hooker, Otto H. Kahn, Ivy L. Lee, Alfred L. Loomis, Dave H. Morris, Frederick H. Osborn, Howard A. Poillon, Lloyd N. Scott and Charles A. Stone as directors of Research Corporation is hereby legalized, ratified and confirmed and the acts of said directors and all acts of any and all persons who have heretofore acted as directors of said corporation are hereby legalized, ratified and confirmed, notwithstanding any defect or irregularity with respect to their election or otherwise. The voting power upon any of Research Corporation's stock held by said corporation shall, so long as so held, and whether constituting the whole or a part only of its capital stock, be vested in said corporation.

Purposes of corporation.

§ 4. The purposes of Research Corporations* shall continue to be as stated in article second of its said certificate of incorporation, to wit:

(a) To receive by gift and to acquire by purchase or otherwise, inventions, patent rights and letters patent either of the United States or foreign countries, and to hold, manage, use, develop, manufacture, install and operate the same, and to conduct commercial operations under or in connection with the development of such inventions, patent rights and letters patent and to sell, license, or otherwise dispose of the same and to collect royalties thereon, and to experiment with and test the validity and value thereof, and to render the same more available and effective in the useful arts and manufactures and for scientific purposes and otherwise.

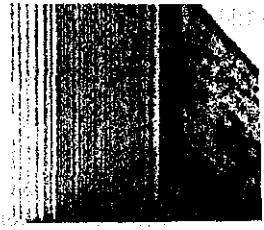
(b) To provide means for the advancement and extension of technical and scientific investigation, research and experimentation by contributing the net earnings of the corporation, over and above such sum or sums as may be reserved or retained and held as an endowment fund or working capital, and also such other moneys and property belonging to the corporation as the board of directors shall from time to time deem proper, to the Smithsonian Institution, and such other scientific and educational institutions and

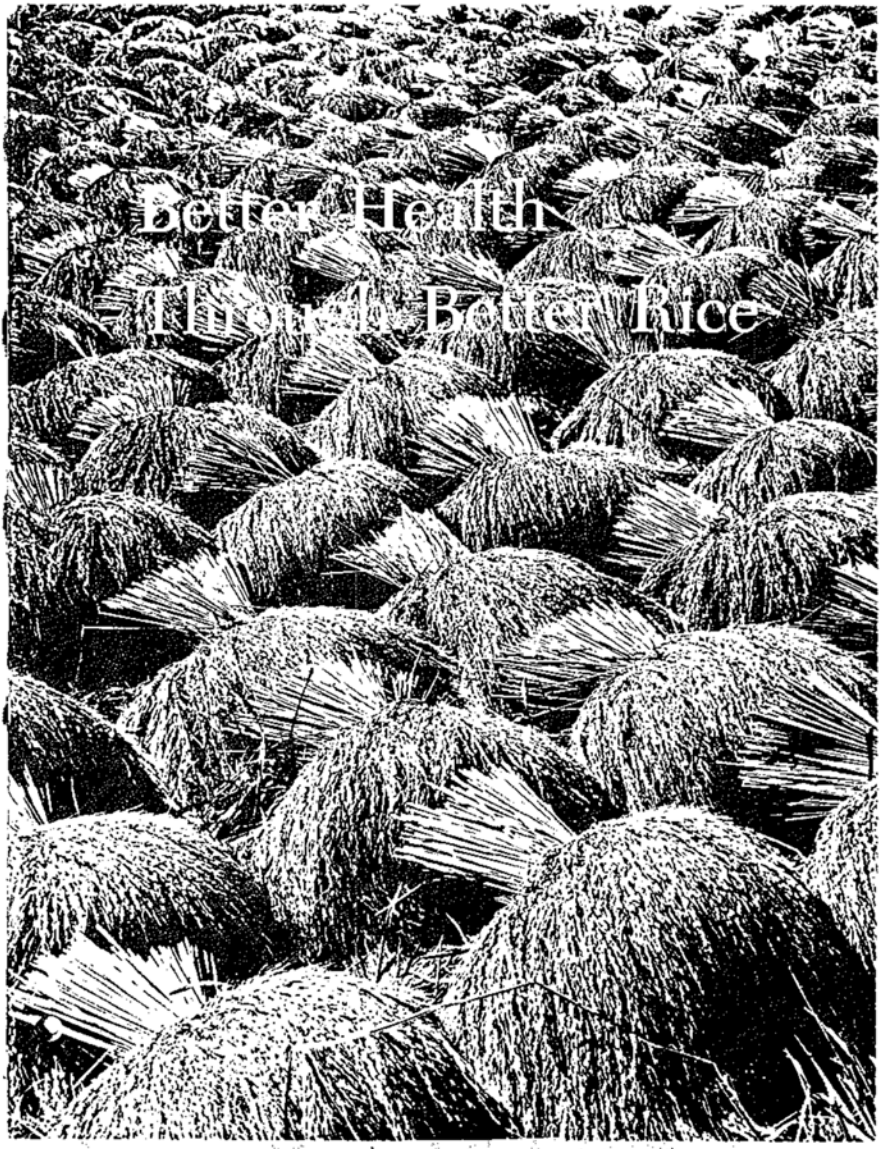
* So in the original.

societies as the board of directors may from time to time select in order to enable such institutions and societies to conduct such investigation, research and experimentation.

(e) To receive, hold and manage, and dispose of such other moneys and property, including the stock of this and of any other corporation, as may, from time to time, be given to or acquired by this corporation in the furtherance of its corporate purposes, and to apply the same and the proceeds or income thereof, to the objects specified in the preceding paragraph.

§ 5. This act shall take effect immediately.




Better Health
Through Better Rice

RESEARCH CORPORATION
BALANCE SHEET
October 31, 1951

ASSETS:			LIABILITIES and CAPITAL:		
GENERAL FUNDS					
Cash		$ 628,648.14	Accounts payable		$ 694,904.89
Marketable securities at cost (at market quotations, $1,499,490.94)		1,500,954.27	Payable to Williams-Waterman Fund		106,778.77
Investment in stock of subsidiary company		10,000.00	Accrued royalties		848,203.91
Accounts and royalties receivable		2,630,783.82	Other accrued liabilities		373,595.48
Inventories of raw materials, parts and work in process		1,348,358.84	Billings in advance on construction contract		91,800.00
Unbilled costs on construction contracts in progress, plus extimated profit accrued		1,080,846.17	Provision for additional costs on completed construction contracts		185,741.00
Prepaid expenses and deferred charges		39,470.56	Surplus:		
Buildings, machinery and equipment, etc.	$2,001,835.34		Appropriated	$ 469,473.13	
Less, Accumulated depreciation	537,479.88	1,464,355.46	Unappropriated	6,059,091.84	6,528,564.97
Land		45,042.24			
Other assets		73,129.52			
		$ 8,829,589.02			$ 8,829,589.02
WILLIAMS-WATERMAN FUND					
Cash		$ 83,627.32			
Marketable securities at cost (at market quotations, $1,528,780.23)		1,511,911.41	Surplus:		
Accrued interest receivable		12,688.15	Appropriated	$ 88,170.00	
Receivable from General Funds		106,778.77	Unappropriated	1,626,835.65	
		$ 1,715,005.65			$ 1,715,005.65
		$10,544,594.67			$10,544,594.67

Note:
The total authorized and issued capital stock of Research Corporation, 200 shares of a par value of $100 per share, is held in the corporation's treasury pursuant to legislative authority granted by Chapter 523 of the Laws of New York State for 1932.

RESEARCH CORPORATION
STATEMENT of APPROPRIATED and UNAPPROPRIATED SURPLUS
for the fiscal year ended October 31, 1951

GENERAL FUNDS

	Appropriated							
	Grants Payable	Kendall-Hench Fund	Reserve for Grants-in-Aid	President's Fund	Reserve for Loss on Investments	Total	Unappropriated	Total
Balances, October 31, 1950			$579,776.77	$6,655.00	$38,900.00	$ 625,331.77	$5,191,785.24	$5,817,117.01
Add, Adjustments of unappropriated surplus relating to prior years							427,261.79	427,261.79
Balances, October 31, 1950, as adjusted			579,776.77	6,655.00	38,900.00	625,331.77	5,619,047.03	6,244,378.80
Add:								
Contributions received		$100,250.00				100,250.00		100,250.00
Net income for the year ended October 31,1951							756,662.97	756,662.97
		100,250.00	579,776.77	6,655.00	38,900.00	725,581.77	6,375,710.00	7,101,291.77
Appropriations to:								
Kendall-Hench Fund		47,980.65				47,980.65	47,890.65*	-
Reserve for grants-in-aid			235,792.51			235,792.51	235,792.51*	-
President's Fund				3,345.00		3,345.00	3,345.00*	-
Reserve for loss on investments					29,500.00	29,500.00	29,500.00*	-
Grants payable (net)	$25,125.00		25,125.00*			-		-
	25,125.00	148,230.65	790,444.28	10,000.00	68,400.00	1,042,199.93	6,059,091.84	7,101,291.77
Grants for scientific research paid, less refunds received		23,040.22	547,051.58	2,635.00		572,726.80		572,726.80
Balances, October 31, 1951	$25,125.00	$125,190.43	$243,392.70	$7,365.00	$68,400.00	$ 469,473.13	$6,059,091.84	$6,528,564.97

WILLIAMS-WATERMAN FUND

Balances, October 31, 1950	$33,600.00				$19,900.00	$53,500.00	$1,508,951.50	$1,562,451.50
Add, Adjustments of Unappropriated surplus relating to prior years							32,841.18	32,841.18
Balances, October 31, 1950, as adjusted	33,600.00				19,900.00	53,500.00	1,541,792.68	1,595,292.68
Add, Net income for the year ended Oct.31,1951							352,485.44	352,485.44
	33,600.00				19,900.00	53,500.00	1,894,278.12	1,947,778.12
Appropriations to:								
Reserve for loss on investments					8,800.00	8,800.00	8,800.00*	-
Grants payable (net)	25,870.00					25,870.00	25,870.00*	-
	59,470.00				28,700.00	88,170.00	1,859,608.12	1,947,778.12
Grants for scientific research paid, less refunds received							232,772.47	232,772.47
Balances, October 31, 1951	$59,470.00				$28,700.00	$88,170.00	$1,626,835.65	$1,715,005.65

* Indicates red figure.

RESEARCH CORPORATION
STATEMENT of INCOME and EXPENSES
for the fiscal year ended October 31, 1951

GENERAL FUNDS

Precipitation net income:			
Sales value of construction contracts		$6,041,544.90	
Sales of materials, spare parts, etc.		533,319.10	
Test and service sales		29,828.38	
Cash discounts		14,176.00	
Recoveries of pension contributions		19,243.24	
Miscellaneous		8,137.24	$6,646,248.86
Less:			
Construction and manufacturing costs, excluding depreciation and taxes		5,094,130.73	
Administrative, general and selling expenses, excluding taxes		820,089.99	
Depreciation		97,230.12	
Taxes		29,182.48	
Special pension payment		35,323.32	
Miscellaneous		3,906.98	6,079,863.62
			566,385.24
Less, Provision for adjusted compensation			146,037.23
Precipitation net income			420,348.01
Royalty income		732,258.26	
Less, Expenses		241,149.81	
Royalty net income		491,108.47	
Other income:			
Interest and dividends	$61,632.57		
Net profit on sales of securities	22,289.25	83,921.82	
		575,030.29	
Other expenses:			
Grants-in-aid expenses	97,630.09		
General expenses	34,725.34	132,355.43	
		442,674.86	
Less, Provision for adjusted compensation		106,359.90	336,314.96
Net income			$ 756,662.97

WILLIAMS-WATERMAN FUND

Income:	
Royalty income	$343,176.15
Interest and dividends	29,963.62
Net profit on sales of securities	4,943.32
Miscellaneous	57.87
	378,140.96
Expenses	25,655.52
Net income	$352,485.44

OREGON STATE MONOGRAPHS
Reprint No. 169

Quinazolines. XI. Synthesis of Several Amino-quinazolines and Their Sulfa Derivatives

M. B. Naff
B. E. Christensen

Reprinted from
Journal of the American Chemical Society
73, 1372 (1951)

RESEARCH CORPORATION

GENERAL GRANTS PAID
during the fiscal year ended October 31, 1951

Applicant & Amount	Institution	Subject
G. W. Kidder $20,975.00	Amherst College	A study of metabolic inhibitors as chematherapeutic agents in the control of cancer and viral invasions
Rohn Truell $3,500.00	Brown University	Examination of properties of solids by means of ultrasonic radiation in the megacycle region
$4,000.00	Canadian Mathematical Congress	To sponsor the attendance of young men from Canadian universities to the sessions of the Summer Research Institute of the Canadian Mathematical Congress
R. G. Parr $3,000.00	Carnegie Institute of Technology	Molecular orbital calculations
Harvey Fletcher $5,000.00	Columbia University	Musical acoustics
Bernard Camber $1,500.00*	Columbia University	Investigation of the chemical nature and properties of the 2-hydroxy-3-napthoic acid hydrazide derivatives of the carbonyl compounds present in human urine
Fausto A. Ramirez $2,000.00	Columbia University	Studies in the morphine-apomorphine rearrangement
Robert G. Sproull $3,550.00	Cornell University	Electron and ion motions in barium oxide crystals
J. Robert Miller $1,135.00 *	Hartwick College	Synthesis of some ethers of 1-(2-hydroxyethyl)-imidazole as possible antihistamines
Bernhard Witkop $800.00	Harvard University	Toward the structural elucidation of the alkaloids from calabash curare
R. B. Woodward $5,792.51	Harvard University	The total synthesis of cortisone
Paul D. Bartlett $3,000.00	Harvard University	The mechanism of low-temperature reaction of elemental sulfur with organic compounds

Applicant & Amount	Institution	Subject
Louis F. Fieser $5,000.00	Harvard University	Chemotherapy; chemical problems
George S. Hammond $3,000.00	Iowa State College	The study of the reactions of radicals produced in solution by photolysis
W. Weltner, Jr. $2,500.00	Johns Hopkins University	Thermodynamic properties of molecules
R. Dean Dragsdorf $2,000.00	Kansas State College	An oxidation study of nickel in the region of the curie temperature
N. A. Milas $18,730.00	Massachusetts Institute of Technology	Continued studies on vitamin A
$1,000.00	National Association for Mental Health, Inc.	An initial and final contribution to a "pioneering effort in its early critical stages"
$7,500.00	National Research Council	Operations Research
Ralph W. G. Wyckoff $4,000.00	National Research Council	Publication program of the International Union of Crystallography
Leon H. Fisher $2,800.00	New York University	Formative time lags in spark discharges
Byron Riegel $10,000.00	Northwestern University	Synthesis of Cortisone
H. L. Dryden, Jr. $2,200.00	Northwestern University	Studies of seven-membered ring compounds
Donald D. DeFord $2,500.00	Northwestern University	New reagents for use in coulometric titrations
Edson R. Peck $1,500.00	Northwestern University	Reversible counting of interferometer fringes
Charles H. Shaw $3,300.00	Ohio State University	The structure of liquid helium
Melvin S. Newman $1,800.00	Ohio State University	Preparation of the cyclic carbonate of ethylenediol and study of its reactions
E. C. Kendall $22,500.00##	Princeton University	Research in the chemistry of steroid hormones

Applicant & Amount	Institution	Subject
E. Newton Harvey $6,500.00	Princeton University	Biochemical study of luminous substance from the crustacean, Cypridina
Nathan Kornblum $1,500.00	Purdue University	The reaction of silver nitrite with organic halides
Joseph H. Burckhalter $4,400.00	Rutgers University	The total synthesis of cortisone.
G. W. Spencely $7,200.00	Smithsonian Institution	Publication of a new logarithm table accurate to the 23rd decimal for both natural logs and log 10
R. Hofstadter $5,750.00	Stanford University	Study of nuclear electric charge distribution by experiments on the elastic scattering of electrons from nuclei
Harry S. Mosher $2,500.00	Stanford University	Bimolecular reductions with optically active reducing reagents
James A. Van Allen $2,500.00	State University of Iowa	Interactions of the primary cosmic radiation with various materials
Stanley Wawzonek $1,750.00	State University of Iowa	The preparation of pentaerythrityl ethers of glycols and glycerol
D. J. Cram $1,200.00	University of California	The syntheses and study of the properties of macro-ring compounds that contain aromatic nuclei as part of the ring system
Otto Struve $2,000.00	University of California	Photoelectric study of light curves of beta cephei stars
I. S. Sokolnikoff $3,000.00	University of California at Los Angeles	Two-dimensional elastotatic problems
M. S. Kharasch $14,584.06	University of Chicago	Studies in pure organic chemistry
H. S. Gutowsky $3,200.00	University of Illinois	Nuclear magnetic phenomena in chemical systems
G. L. Woodside $4,000.00	University of Massachusetts	Chemotherapeutic studies on cancer in mice

Applicant & Amount	Institution	Subject
I. M. Kolthoff $3,500.00	University of Minnesota	Application of the rotated platinum and silver wire electrodes to the amperometric determination of traces of oxidizing and reducing agents and to amperometric titrations
Newman A. Hall $2,000.00	University of Minnesota	Low temperature thermodynamic and physical properties of air and associated basic gases
J. L. Irvin E. M. Irvin $3,500.00	University of North Carolina	Isolation and physico chemical characterization of nucleic acids and nucleoproteins
Donald W. Visser $3,000.00	University of Southern California	Synthesis and biological activity of purine and pyrimidine nucleoside
Sidney W. Benson $2,000.00	University of Southern California	Surface areas and the structure of proteins
Norman Kharasch $1,800.00	University of Southern California	Reactions of fluorinating agents with organic sulfur compounds
Roger J. Williams $5,000.00	University of Texas	Exploration of B Vitamins and their functioning
Thomas I. Crowell $1,400.00	University of Virginia	Kinetics of amine-catalyzed condensations of aldehydes with nitromethane
Carl D. Gutsche $3,000.00	Washington University	The synthesis of colchicine and related compounds; diazoalkane ring enlargement reactions
Harold H. Zeiss $2,400.00	Yale University	Research on pimaric and kindred acids as starting materials for the synthesis of cortisone and similar substances
James English, Jr. $2,400.00	Yale University	Study of the properties of synthetic analogs of Auxin a and their conversion to Auxin b analogs
$3,000.00	Woods Hole Oceanographic Institute	
$236,666.57		

* President's Fund grant.
** Kendall-Hench Fund grant.

RESEARCH CORPORATION

FREDERICK GARDNER COTTRELL GRANTS PAID
during the fiscal year ended October 31, 1951

Applicant & Amount	Institution	Subject
Clifton P. Idyll $1,850.00	Adelphi College	The synthesis and properties of biimidazole derivatives
Robert H. Linnell $2,000.00	American University of Beirut	Thermal decomposition of nitrogen heterocyclic compounds
Richard G. Yalman $2,820.00	Antioch College	Kinetics of reaction of acidocobaltammines
Albert B. Stewart $1,132.25	Antioch College	Investigations to determine the mechanism of the glow discharge with spontaneous oscillations
I. Moyer Hunsberger $1,200.00	Antioch College	Use of infrared spectra in determining the degree of bond fixation in polycyclic systems
Virgil L. Tweedie $1,750.00	Baylor University	Investigation of the copper-1 chloride catalyzed acid hydrolysis of allylic chlorides
Joseph C. Trantham $1,000.00	Baylor University	Molecular association studies in the high frequency field
Norman Lichtin $2,480.00	Boston University	A study of carbonium ions in liquid sulfur dioxide
Saul G. Cohen $3,500.00	Brandeis University	Some fundamental reactions of free radicals in solution
Irving Allan Kaye $2,700.00	Brooklyn College	Heterocyclic aminoalcohols and ethers
Robert H. Schuler $2,400.00	Canisius College	Radio-iodine as a free radical detector for liquid phase processes
Joseph C. Michalowicz $1,000.00	Catholic University of America	Electrical contiguity of mercury when in contact with other metals

Applicant & Amount	Institution	Subject
A. S. Brown $2,500.00	Colgate University	Coordination Complexes; Structures of 4-coordinate complexes and 6-coordinate complexes
O. L. Wright $1,000.00	College of Emporia	The alkylation of some secondary alkylbenzenes using the Perrier modification of the Friedelcrafts reaction
E. G. Meyer $1,500.00	College of St. Joseph on the Rio Grande	The kinetics of the Tin(II)-Tin(IV) exchange using stannous & stannic bromides
Joseph R. Feldmeier $2,050.00	College of St. Thomas	Pair production by beta rays
John D. Reinheimer $1,500.00	College of Wooster	The Friedel crafts reaction in qualtitative organic analysis
Virgil E. Bottom $1,750.00	Colorado A. & M. College	Study of the lattice defects of quartz, and their relationships to the mechanical properties
J. H. Wolfenden $1,575.00	Dartmouth College	Kinetics of some oxidation, substitution and addition reactions of iodine
Donald J. Cook $1,350.00	DePauw University	Studies concerning N-substituted-2-quinolones and N-substituted-2-pyridones
Raymond E. Vener $2,000.00	Drexel Institute of Technology	The determination of Joule-Thomson coefficients of various hydrocarbons, including gaseous mixtures as well as pure gases
Bartlett T. Dewey $1,100.00	Eastern New Mexico University	Identification of carbonyl compounds by means of the optical and crystallographic properties of the semicarbazones
Nelson Fuson $3,500.00	Fisk University	Study of the mercapturic acid synthesis in the animal by means of infrared spectroscopy
Lee Lorch $1,500.00	Fisk University	Summation methods for infinite series

Applicant & Amount	Institution	Subject
F. R. Hinter $1,850.00	Florida State University	The effect of bacterial toxins on the functioning of cells
Ernest Grunwald $2,500.00	Florida State University	Solvation in hydroxylic solvents
Werner Herz $2,685.00	Florida State University	Reduction of alpha-ketoepoxides
F. F. Nord $2,400.00	Fordham University	Structure of pigments and mechanism of fat formation
D. R. Norton $3,500.00	George Washington University	A polarographic study of o-phthalaldehyde and its reaction products with amino acids and other compounds
William H. Eberhardt $3,500.00	Georgia Institute of Technology	Electronic spectra of polyatomic molecules
Jack Hine $1,500.00	Georgia Institute of Technology	The effect of halogen atoms on the reactivity of other halogen atoms in the same molecule
Thomas O. Jones $1,400.00	Haverford College	The preparation of nitrotolylhydrazides as acid and ester derivatives
O. T. Benfey $800.00	Haverford College	A. Naphthylamine addition compounds as derivatives of alcohols, phenols and esters. B. The mechanism of acid-ester exchange reactions
Gerrit Van Zyl $2,000.00	Hope College	Reactions of epoxides with malonic esters and monosubstituted malonic esters
F. F. Cleveland $4,000.00	Illinois Institute of Technology	Raman spectra of liquids and gases under low and high dispersion
Max M. Frocht $2,500.00	Illinois Institute of Technology	A general method for three-dimensional photoelastic stress analysis
Bernard Rabinovitch $2,000.00	Illinois Institute of Technology	Light scattering from three-dimensional polymer networks
R. W. Thompson $2,000.00	Indiana University	The high energy interactions of cosmic rays

Applicant & Amount	Institution	Subject
Robert B. Fischer $1,700.00	Indiana University	Applications of microwave spectroscopy in analytical chemistry
E. Campaigne $1,290.00	Indiana University	Synthesis of substituted thiofluorenones and related compounds
Julian K. Knipp $4,790.00	Iowa State College	A study of low energy electrons from u mesons by means of photographic emulsions
David R. Smith $700.00	James Millikin University	Synthesis of quaternary ammonium salts of heterocyclic bases and a study of their germicidal activity
Henry F. Birkenhauer $2,127.00	John Carroll University	Analysis of shaking table motion with accelerometers and displacement meters to improve technique of recording transients
Ralph O. Kerman $1,000.00	Kalamazoo College	Light charged particle scattering crosssections as a function of angle
Dexter B. Sharp $800.00	Kansas State College	The chemistry of vicinal tricarbonyl compounds
Arthur C. Andrews $1,800.00	Kansas State College	Chemical kinetic studies of catalytic oxidations and dehydrogenations
Donald G. Kundiger $3,300.00	Kansas State College	Reactions of ketene acetal with certain organic halides
Curtis B. Coleman $750.00	Knox College	Investigation of free radical aromatic substitution reactions
R. P. Perry $1,000.00	Langston University	Benzamidine and cinnamidine derivatives of some highly substituted benzoic and cinnamic acids
Howard A. Neidig $1,500.00	Lebanon Valley College	The phenyl carbonium ion as a reaction intermediate
A. C. Zettlemoyer $2,000.00	Lehigh University	Sorption by organic substrates
Edward D. Amstutz $1,300.00	Lehigh University	Heterocyclic iminohalide reactivity

Applicant & Amount	Institution	Subject
George L. Cunningham, Jr. $3,000.00	Louisiana State University	Microwave spectroscopy
Paul Delahay $1,800.00	Louisiana State University	A polarographic study of the kinetics or irreversible electrode reactions
Gunther L. Eichhorn $2,000.00	Louisiana State University	Bond strengths in coordination compounds
Stanley Bashkin $2,500.00	Louisiana State University	Inelastic scattering of neutrons
Geoffrey Broughton $1,400.00	Lowell Textile Institute	Bonding character in the paper
Martin B. Williamson $1,000.00	Loyola University	Structure of Proteins
Raymond P. Mariella $2,200.00	Loyola University	Absorption spectra of alicyclic compounds
Adrian Docken $1,940.00	Luther College	Investigation of methods for the synthesis of organic chemical compounds containing unsaturated, heterocyclic, seven-membered rings
John H. Buckingham $1,200.00	Miami University	Radioactive tracer studies
Jay E. Taylor $2,500.00	Miami University	A detailed study of the reactions of ninhydrin with amino acids
Robert D. Schuetz $1,800.00	Michigan State College	Studies on the mechanism of Cis-Trans orientation in catalytic hydrogenation
Victor Gilpin $1,800.00	Michigan State College	1. Optical crystallography of rare earth salts. 2. Influence of the solvent on kinetics of polymorph transitions
K. J. Goering $1,350.00	Montana State College	Purified amylase from fungi grown in submerged cultures
Richard E. Juday $1,000.00	Montana State University	Compounds having the activity of steroid hormones
Edward P. Clancy $750.00	Mount Holyoke College	Experimental study of light scattered by liquid droplets whose diameters are of the order of magnitude of the wave length

Applicant & Amount	Institution	Subject
E. M. Moore $2,000.00	Mount Holyoke College	The determination of dielectric constants and dipole moments of substances in solution, by the heterodyne-beat method
Mary Martinette $1,1hh.00	Mundelein College	The stereochemistry of complex inorganic compounds
Herbert E. Ungnade $1,200.00	New Mexico Highlands University	The reaction of carbon monoxide donors with hydrocarbons and ethers
Kurt Muslow $300.00	New York University	The synthesis of hydroxyamino acids
R. T. Wendles R. E. Dunbar $2,000.00	North Dakota Agricultural College	Dibenzofuran sulfonic acids for protein hydrolysis and amino acid precipitation
Price Truitt $1,950	North Texas State College	Cleavage of 1,1-di-(2-Thienyl) alkanes with Raney nickel
David M. Howell $2,080.00	Northeastern University	Studies on hydroxylamines and their metal complexes
W. Robert Winans $1,750.00	Occidental College	The separation of the higher fatty acids by a chromatographic method
John G. Daunt $3,500.00	Ohio State University	Nuclear magnetic cooling
Maynard B. Neher $2,000.00	Ohio University	Diels-Alder reaction in preparation of chloro-nitro compounds of possible interest as insecticides
L. P. Eblin $1,000.00	Ohio University	Viscosities of solutions containing mixtures of salts
Fred A. Tate $1,250.00	Ohio University	The mechanism of the decarboxylation reaction for B-y unsaturated acids
Roy G. Bossert $750.00	Ohio Wesleyan University	The application of diisocyanates to the preparation of derivatives of alcohols, phenols and alkyl halides
Leo Gerwin $2,000.00	Oklahoma A. & M. College	A study of holdup and limiting velocities in spray liquid-liquid towers

Applicant & Amount	Institution	Subject
Gordon H. Bjorklund $1,220.00	Oklahoma City University	Synthesis and reactions of nitranilic acid
J. C. Decius $1,600.00	Oregon State College	Infrared spectroscopy and structure of phthalocyanins, porphyrins, and related compounds
E. N. Marvell $1,800.00	Oregon State College	Para products of the Claisen rearrangement
A. W. Ramstad R. C. Olsen $1,525.00	Pacific Lutheran College	Synthesis of germanium organic compounds and determination of physical properties
M. E. Mathisen $1,600.00	Pacific Union College	Spectrophotometric studies chiefly in the field of complex ions in solution
John J. Paris $2,500.00	Pacific University	A comparison of forward and backward secondaries produced by high energy primary electrons from thin targets
P. J. Elving $2,375.00	Pennsylvania State College	Polarographic behavior of organic compounds
C. G. Overberger $2,600.00	Polytechnic Institute of Brooklyn	Polar azo
Frederick M. Beringer $2,600.00	Polytechnic Institute of Brooklyn	The reactions of nitrous oxide with carbanions and carbonium ions
E. I. Becker $2,600.00	Polytechnic Institute of Brooklyn	The addition of grignard reagents to 3,4-epoxy-1-butene
George B. Diamond $2,500.00	Pratt Institute	The electrolytic reduction of some substituted naphthalenes
Ernest H. Lyons, Jr. $620.00	Principia College	The rate of dissociation of complex ions of metals at electrolytic cathodes
Joseph H. Smith $1,000.00	Purdue University	Heat and mass transfer in gas-solid systems
Robert A. Benkeser $1,500.00	Purdue University	Preparation and reactions of silicon organo-metallics
Joel O. Hougen $1,800.00	Rensselaer Polytechnic Institute	Investigation of the rate of reduction of tungsten oxide with hydrogen

Applicant & Amount	Institution	Subject
George J. Jenz $2,500.00	Rensselaer Polytechnic Institute	The reaction of cyanogen and related nitriles with unsaturated organic compounds
W. D. Walker $2,150.00	Rice Institute	A study of penetrating showers in carbon
Edward S. Lewis $1,370.00	Rice Institute	An investigation of the kinetics and stereochemistry of some displacements of hydroxyl by halogen
Benjamin Carroll $2,500.00	Rutgers University	Use of dyestuffs for investigating enzymatic reactions in solution
Frank Dunnington $4,100.00	Rutgers University	Low temperatures by adiabatic demagnetization
Ulrich P. Strauss $2,500.00	Rutgers University	Polysoaps
George W. Hazzard $1,600.00	St. Lawrence University	Ultrasonic velocity in polystyrene as a function of molecular weight at a frequency of one megacycle per second, temperature to vary from twenty to eighty degrees centigrade
Hugh L. Donahoe $1,900.00	Saint Louis University	Synthesis of drugs which paralyze striated muscle
F. E. Horan $730.00	St. Martin's College	Ultrasonic investigations of starches
Miriam M. Stimson $3,200.00	Siena Heights College	Correlation of ultraviolet and infrared absorption characteristics of nucleic acid derivatives in the solid state
Gladys A. Anslow $2,000.00	Smith College	Spectrophotometric studies of biologically important molecules
Spencer Macy $750.00	South Dakota School of Mines and Technology	Measurement of the electro-optical constants of sphalerite and other cubic crystals
Ogden Baine $1,500.00	Southern Methodist University	A study of the Kolbe-Schmitt reaction

Applicant & Amount	Institution	Subject
James L. A. Webb $2,000.00	Southwestern at Memphis	A new pyrrole pigment
Milan W. Garrett $1,600.00	Swarthmore College	Design of wire-wound systems for the production of very uniform magnetic fields and field gradients. Design of search-coil systems for use with a ballistic galvanometer to measure field or gradient at a single point in any magnetic field
E. A. Fehnel $2,000.00	Swarthmore College	Preparation and properties of organic sulfur compounds
Gerald F. Grillot $2,200.00	Syracuse University	Synthesis of substituted phenothiazines
Henry Linschitz $1,800.00	Syracuse University	Photochemical reactions of complex molecules in condensed phase
Aden J. King $2,300.00	Syracuse University	Study of the alloy systems of barium, strontium and calcium
Lloyd L. Woods $360.00	Texas State University for Negroes	The condensation of aldehydes, ketones, nitriles and acyl halides with kojic acid
Fred L. Greenwood $1,900.00	Tufts College	Ozonolysis of conjugated dienes
Hans B. Jonassen $1,850.00	Tulane University	Studies of metallated dye complexes
David A. Shirley $1,800.00	Tulane University	Synthesis of anti-tubercular chemotherapeutic agents
Louis F. Cason $2,500.00	Tuskegee Institute	A study of the stability of some sulfurcontaining organosilicon compounds
Gerald R. Lappin $330.00	University of Arizona	Investigation of allylic-like rearrangements of beta acetylenic compounds
Gerald Perkins, Jr. $800.00	University of Arizona	Application of oscillographic polarography to analytical chemistry - Concentration as a function of the height of the polarographic wave

Applicant & Amount	Institution	Subject
Alvin I. Kosak $1,350.00	University of Cincinnati	The chemistry of hydroxythiophene derivatives
Harold E. Hoelscher $700.00	University of Cincinnati	Kinetics of the vapor phase catalytic reactions of an homologous series
William Licht, Jr. $1,500.00	University of Cincinnati	Further studies of the adsorption wave in beds of granular desiccants
Garth L. Lee $2,050.00	University of Colorado	1. The zinc photosensitized reaction of simple hydrocarbons 2. The zinc photosensitized reaction between simple hydrocarbons and simple alkyl helides
Edgar Everhart $3,000.00	University of Connecticut	A study of the hertzian oscillator
Paul R. Zilsel $1,650.00	University of Connecticut	Theoretical investigations into the nature of superconductivity and superfluidity
Ellis R. Lippincott $5,000.00	University of Connecticut	Structure of polyatomic molecules as determined from Raman and infrared spectra
Martin A. Hirshfeld $3,000.00	University of Delaware	Use of Millikan oil drop method for measuring the viscosity of gases, and for determining the value of Millikan's constant over an extended temperature range
Charles H. Prien $2,250.00	University of Denver	Effect of solvent configuration on depolymerization of oil-shale kerogen
Clarence J. Hull $1,600.00	University of Detroit	The formation of indenols from indones and subsequent salt formation
G. B. Butler $2,500.00	University of Florida	The preparation and polymerization of branched chain fluoroolefins
Carl Featherbee $1,600.00	University of Hawaii	Synthesis of 3-Aza-3-alkylbicycl (3,3,1) nonan-9-ones
Paul J. Scheuer $2,800.00	University of Hawaii	Synthesis of a degradation product of strychnine

Applicant & Amount	Institution	Subject
Mark Gurevitch $1,500.00	University of Idaho	Relative stability of the isobaric pair Os 187 - Re 187
Elmer K. Rannio $1,500.00	University of Idaho	A study of the possible synthetic value of certain acetylenic compounds
Joseph H. Burckhalter $5,750.00	University of Kansas	Synthetic relatives of cortisone
Calvin A. VanderWerf $1,800.00	University of Kansas	A study of the reaction rates of S_Ni type displacements on substituted alkyl halides
John F. Phillips $1,600.00	University of Louisville	Analytical chemistry of 8-hydroxyquinaldine
Richard H. Wiley $1,670.00	University of Louisville	A study of decarboxylation reactions
R. Edwin Worley $900.00	University of Nevada	Initial delay time and growth characteristic, of the Lewis-Rayleigh Afterglow
John A. Lockwood $2,500.00	University of New Hampshire	Small cavity accelerator for electrons
Carsten Steffens $2,000.00	University of New Mexico	Mechanism of the gas-phase reactions of toluene
Raymond N. Castle $1,600.00	University of New Mexico	The optical crystallographic properties of the aliphatic dicarboxamides
Guido H. Daub $1,400.00	University of New Mexico	The Stobbe condensation with perinsphthanone-7 and derivatives
Arthur Roe $3,000.00	University of North Carolina	A study of the effect of carbon 14 on the course of certain organic reactions
Lawrence Summers $1,750.00	University of North Dakota	Ionic nature of organolithium compounds
E. L. Eliel $2,400.00	University of Notre Dame	Optical isomerism due to the presence of hydrogen and deuterium in organic molecules
Leon S. Cieresako $1,600.00	University of Oklahoma	Chemistry of Poly-D-Glutamic Acid

Applicant & Amount	Institution	Subject
V. R. Gaertner $1,500.00	University of Oregon	Synthesis of strained fused polynuclear hydrocarbons
Francis E. Dart $1,600.00	University of Oregon	Optical and electronic properties of solid semi-conductors
Carl W. Bonhorst $1,450.00	University of Portland	Resolutions of racemic mixtures of amino acids
Eugene L. Colichman $1,500.00	University of Portland	Electrochemical studies of some iodonium and sulfonium salts
P. S. Skell $1,500.00	University of Portland	Research in the field of aliphatic free radical chemistry
Albert V. Baez $2,500.00	University of Redlands	Investigation of the use of x-rays in the method of microscopy by reconstructed wavefronts
R. H. Hermes $500.00	University of Santa Clara	Permanent set and creep properties of concrete in tension
Oscar D. Bonner $2,000.00	University of South Carolina	A study of the silver-sodium and mercurous hydrogen ion exchange systems
George F. Scott $1,225.00	University of South Dakota	Attempt to prepare 4,5-benzazepine and derivatives
J. A. Berson $1,800.00	University of Southern California	Some experiments in the conversion of carbon atom asymmetry to molecular asymmetry
H. L. Friedman $1,800.00	University of Southern California	The determination of the electrode potentials of the alkali metals in liquid ammonia
G. K. Schweitzer $1,300.00	University of Tennessee	Racemization of inorganic stereoisomers
Wilson M. Whaley $2,500.00	University of Tennessee	The preparation of bis (tetrahydroisoquinol) structurally related to berbamine
C. A. Buehler $1,800.00	University of Tennessee	Study of ene-diols in the nitrogen heterocyclic series
William H. Fletcher $2,200.00	University of Tennessee	Vibrational assignments and force constants of ketene, allene and related molecules

Applicant & Amount	Institution	Subject
W. Stuart Haynes $1,200.00	University of Utah	Photolysis of ketones and other organic compounds
Donald C. Gregg $1,600.00	University of Vermont	Studies on the trityl ethers of thiophenol and isomeric thiocresols
Arthur G. Anderson, Jr. $1,650.00	University of Washington	The chemistry of azulene
Kenneth B. Wiberg $1,980.00	University of Washington	A study of the mechanism and stereochemistry of 1,3-shifts
M. Angelice Seibert $2,000.00	Ursuline College	Determination of the essential chemical groups in enzyme proteins
Alvin W. Meibohm $1,850.00	Valparaiso University	Coordination compounds of substituted propylemines, their structure stability and analytical applications
Theodore C. Schwan $933.00	Valparaiso University	Copolymerization properties of certain organic compounds
Lamar Field $2,500.00	Vanderbilt University	Studies in the organic chemistry of sulfur
Monica Healea $7,500.00	Vassar College	Secondary emission of electrons from metals bombarded by positive ions at primary energies up to 75 KeV.
Frank A. Vingiello $1,300.00	Virginia Polytechnic Institute	The mechanism of aromatic cyclodehydration
Robert C. Krug $1,600.00	Virginia Polytechnic Institute	The action of reducing agents upon organic compounds in liquid ammonia
Clayton M. Ziemen $750.00	Wabash College	The dielectric constant of gases at 9470 mc
E. Eugene Weaver $1,000.00	Wabash College	Preparation and study of the esters of alkylfluophosphonous acid
James S. Fritz $450.00	Wayne University	Further investigation of titration of acids in non-aqueous solutions
Calvin L. Stevens $2,200.00	Wayne University	Aliphatic alphahalonitriles

Applicant & Amount	Institution	Subject
Robert T. Mathews $740.00	Wesleyan University	Photoelectric determination of the colors and apparent magnitudes of the 300 brightest stars
E. L. Pace $3,000.00	Western Reserve University	Calorimetric heat of adsorption for the argon-titanium dioxide system
Bernard A. Nelson $750	Wheaton College	Derivatives of cyclic ethers
David F. Bender $1,500.00	Whittier College	The construction of a detecting device to measure the presence of positive rays of moderate energy (about 100 e.v.)
W. L. Kranich $1,500.00	Worcester Poolytechnic Institute	Application of optical methods to chemical engineering research
R. Harding Bliss $1,200.00	Yale University	Kinetics of gas adsorption and absorption

$349,661.25

RESEARCH CORPORATION

WILLIAMS-WATERMAN FUND GRANTS PAID
during the fiscal year ended October 31, 1951

Applicant & Amount	Institution	Subject
W. D. Salmon $3,000.00	Alabama Polytechnic Institute	Amino acid balance as a factor relating to the requirement for essential amino acids
G. W. Kidder $20,975.00	Amherst College	A study of metabolic inhibitors as chemotherapeutic agents in the control of cancer and viral invasions
T. J. Bond $1,100.00	Baylor University	Studies on the nutritional significance of folinic acid
H. K. Mitchell $4,000.00	California Institute of Technology	Biosynthesis and interconversions of aromatic metabolites
Burt Wolbach $5,000.00	Children's Hospital	The morphologic characterization of deficiency states and of certain hypervitaminoses
E. J. Lease $6,000.00	Clemson Agricultural College	Improvement of the nutritive value of certain staple southern foods
Henry C. Sherman $3,000.00	Columbia University	Long term effects of diets
Mary L. Caldwell $3,600.00	Columbia University	"A study of inositol as a constituent of pancreatic amylase"
Charles A. Slanetz $4,500.00	Columbia University	Characterization and attempted isolation of the vitamin A-like liver factor
Douglas J. Hennessy $3,530.00	Fordham University	The stability of thiamin
D. Mark Hegsted $1,500.00	Harvard University School of Public Health	A study of the factors involved in the excessive iron absorption on corn diets
$45,000.00	Institute of Nutrition	Rice enrichment in the Philippines
Nathan O. Kaplan Sidney P. Colowick $3,000.00	Johns Hopkins University	The function and nature of bound coenzymes

Applicant & Amount	Institution	Subject
M. S. Shaw $2,660.00	Mississippi State College	Enrichment of corn meal in Mississippi mills
$7,500.00	National Research Council	Support of work of Food and Nutrition Board
S. Ochoa $3,250.00	New York University	The study of enzyme systems involved in biological oxidations and syntheses
David S. Weaver $7,000.00	North Carolina State College of Agriculture and Engineering of University of North Carolina	Corn meal enrichment in North Carolina
W. T. Tompkins $12,500.00	Pennsylvania Hospital	Significance of nutrition and nutritional deficiences in pregnancy
M. E. Ensminger $5,000.00	State College of Washington	The requirements of swine for normal reproduction
Joseph Lein $3,600.00	Syracuse University	Investigation of fatty acid biosynthesis through the use of Neurospora mutants
J. R. Couch $8,950.00	Texas Agricultural Experiment Station	Effect of feeding antibiotics on the growth, reproduction and intestinal microflora of the domestic fowl
Grace Goldsmith $9,500.00	Tulane University	Clinical investigation of nutritional diseases
Barnett Sure $3,000.00	University of Arkansas	Vitamin B12 enrichment of vegetable proteins
C. C. Murray $7,350.00	University of Georgia	Corn enrichment in Georgia
Edward J. Herbst $1,800.00	University of Maryland	The function of putrescine and related compounds in the metabolism of microbial and animal tissues
G. L. Woodside $4,000.00	University of Massachusetts	Chemotherapeutic studies on cancer in mice
M. O. Schultze $5,240.00	University of Minnesota	Effects of maternal nutrition on the young
Herman C. Lichstein $3,000.00	University of Minnesota	Influence of amino acids on the formation of enzymes by bacteria

Applicant & Amount	Institution	Subject
Otto Meyerhof $4,500.00	University of Pennsylvania	Tissue metabolism as it concerns the breakdown of carbohydrates
John R. Murlin $4,470.00	University of Rochester	Creatinine nitrogen percentage as a check on biological value of proteins
Ernest Geiger $3,000.00	University of Southern California	(a) The importance of the time factor in the utilization of amino acids and proteins, and (b) The mechanism of protein synthesis
Jackson W. Foster $1,500.00	University of Texas	Bacillin and antibacillin
E. Beerstecher $3,000.00	University of Texas	Crustacean nutrition
John G. Bieri $3,700.00	University of Texas	Protein metabolism in vitamin A deficiency
David E. Green $4,500.00	University of Wisconsin Institute for Enzyme Research	Fellowships for Enzyme Research
Oscar Touster $5,000.00	Vanderbilt University	A study of the synthesis and biological role of glucuronic acid-1-phosphate
G. L. Cantoni $5,350.00	Western Reserve University	Enzymatic mechanisms in transmethylation
Hudson Hoagland $10,420.00	Worcester Foundation of Experimental Biology	Bilateral adrenalectomies of schizophrenic patients
$233,995.00		

990 Department of the Treasury Internal Revenue Service

Return of Organization Exempt from Income Tax

Under section 501(c) of the Internal Revenue Code (Except Private Foundation)

For the calendar year 1975, or fiscal year beginning July 1, 1975, and ending June 30, 19 76

Please type, print or attach label. See instruction O.

Name of organization: Wisconsin Alumni Research Foundation

Address (number and street): 614 North Walnut St., P.O. Box 7365

City or town, State, and ZIP code: Madison, WI 53707

A If gross receipts are not normally more than $5,000 (see general instructions A(4) and R) check here ▶

B Employer identification number (See instruction O): 39-083-3612

C Date created (See instruction P) ▶ 11-14-25

D Date of exemption letter ▶ 10-21-75 & 4-6-76

G If exemption application is pending, check here ▶

H If address changed, check here ▶

Fair market value of assets at end of year (See instruction Q) ▶ 108,553,472

Enter exemption Code paragraph ▶ 501(c)(3). Check appropriate box if applicable—Exempt under section ▶ ☐ 501(e) or ☐ 501(f)

Note: If you checked block "A" above, do not complete Part I or Part II. | For rounding off money items to whole dollar amounts—see instructions.

Part I All Organizations Complete Part I *If line 8 is $10,000 or less, complete only Part I. Do not complete Part II.*

Receipts (Revenues)	1 Gross sales and receipts from all sources, other than shown on lines 5 and 6		15,862,690.67
	2 Cost of goods sold	-0-	
	3 Cost or other basis and sales expenses of assets sold Schedule 9	9,697,224.21	9,697,224.21
	4 Gross income (line 1 less sum of lines 2 and 3)		6,165,466.46
	5 Gross dues and assessments from members and affiliates		none
	6 Gross contributions, gifts, grants and similar amounts received (see instructions) Schedule 1		19,068.43
	7 Total (add lines 4, 5 and 6)		6,184,534.89
	8 Gross receipts for filing requirements tests (add lines 1, 5 and 6)	15,881,759.10	
Expenses and Disbursements	9 Expenses attributable to gross income	1,457,081.72	
	10 Expenses attributable to amount on line 6	none	
	11 Disbursements for purposes for which exempt	4,573,462.93	6,030,544.65
	12 Excess of receipts over expenses and disbursements (line 7 less sum of lines 9, 10, and 11) Increase or (Decrease) in net worth (see instructions)		153,990.24
		Beginning of year	End of year
Assets and Liabilities	13 Total assets	98,703,877.17	96,124,762.02
	14 Total liabilities	19,541,674.56	17,025,034.65
	15 Net worth	79,162,202.61	79,099,727.37

	Yes	No
Have you engaged in any activities which have not previously been reported to the Internal Revenue Service? *If "Yes," attach a detailed description of such activities*		X
Have any changes not previously reported to the Internal Revenue Service been made in your governing instrument, articles of incorporation, or bylaws, or other instruments of similar import? *If "Yes," attach a copy of the changes*		X
(a) Is this a group return filed on behalf of affiliated organizations covered by a group exemption letter? (See instruction G.)		X
(b) Is this a return filed by an affiliated organization covered by a group exemption letter? If "Yes," enter your central or parent organization's four-digit group exemption number (GEN). (See instruction G.) ▶		X
Have you filed a tax return on Form 990-T, "Exempt Organization Business Income Tax Return," for this year?	X	
Was there a substantial contraction during the year? (See instruction N.) *If "Yes" attach a schedule for the disposition(s) for the year(s) showing type of asset disposed of, the date(s) disposed, the cost or other basis, the fair market value on date of disposition and the names and addresses of the recipients of the assets distributed*		X
(a) Enter amount expended directly or indirectly for political purposes $ none		
(b) Did you file Form 1120-POL, "U.S. Income Tax Return of Certain Political Organizations," for this year?		

RECEIVED NOV 18 1976 28 PSC PHILA, PA 22

Clubs exempt under section 501(c)(7) enter amount of:	
(a) Initiation fees and capital contributions included in line 5, Part I	Not applicable
(b) Gross receipts from general public from use of club facilities included in line 1, Part I. (See instruction 22)	Not applicable
Organizations exempt under section 501(c)(12) enter amount of:	
(a) The total amount of gross income received from members or shareholders	Not applicable
(b) The total amount of gross income received from other sources. (Do not net amounts due or paid to other sources against amounts due or received from them.)	Not applicable

Enter your principal activity codes from last page of instructions | 602 |

The books are in care of ▶ John R. Pike Telephone No. ▶ (608) 263-2822

Located at ▶ Wisconsin Alumni Research Foundation, 614 N. Walnut St., Madison, WI 53705

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief it is true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which the preparer has any knowledge.

Date	Signature of officer or trustee	Title
1 Nov. 1976	[signature]	Vice President and Assistant Secretary

Date	Signature of individual or firm preparing return	Preparer's address

from Other Sources (line 1, Part I)		
; sales or receipts from all business activities (state nature). (Attach a statement explaining how each business activity ported on Form 990-T contributed importantly to your exempt purpose. See instruction J.)		
		none
ost		2,064,077.27
ends		2,025,999.09
s rents		210,071.03
: royalties See		914,553.13
. amount received from sale of assets, excluding inventory items (attach schedule) Schedule 9		10,392,410.31
· income (attach schedule—do not include contributions, gifts, grants, etc.) See Schedule 2		255,579.84
Total gross sales and receipts from other sources. Enter here and on line 1, page 1		15,862,690.67

; and Disbursements (lines 9, 10, and 11, Part I)	(A) Attributable to gross income	(B) Attributable to cont's, gifts, etc., rec'd	(C) For exempt purposes
outions, gifts, grants, and similar amounts paid (attach schedule—see instructions)			4,573,462.93
sements to or for members (attach schedule—see instructions)			none
nsation of officers, directors, and trustees (attach schedule—see instructions) (8)	none		
· salaries and wages	329,967.39		
ension plans (see instructions). (Enter number of plans X /)	34,224.07		
Employee benefit programs (see instructions)	8,480.00		
est Paid to Pension Fund for Nde Interest	142,750.00		
s FICA	11,774.62		
ciation (and depletion) (attach schedule—see instructions) (7)	118,020.63		
t fees paid for raising contributions, gifts, grants, etc.			
r (attach schedule) See Schedule 3	811,865.01		
Totals. Enter here and on lines 9, 10 and 11, page 1	1,457,081.72		4,573,462.93

Balance Sheets	Beginning of Taxable Year (A) Amount	Beginning of Taxable Year (B) Total	End of Taxable Year (C) Amount	End of Taxable Year (D) Total
Cash: (a) Savings and interest-bearing accounts	362,974		129,343	
(b) Other	-0-	362,974	-0-	129,343
Accounts receivable net		45,200		421,735
Notes receivable net (attach schedule)		591,071		473,990
Inventories		-0-		-0-
Gov't obligations: (a) U.S. and instrumentalities				
(b) State, subdivisions thereof, etc.				
Investments in nongovernmental bonds, etc. (attach schedule)		2,922,154		2,602,383
Investments in corporate stocks (attach schedule)		59,540,590		65,414,715
Mortgage loans (number of loans Land Contracts Receivable		346,369		37,181
Other investments (attach schedule) Schedule 5		29,083,316		21,334,353
Depreciable (depletable) assets (attach schedule) 7	6,112,605		6,110,987	
(a) Less accumulated depreciation (depletion)	466,360	5,646,245	559,414	5,551,573
Land		123,932		123,932
Other assets (attach schedule)		42,026		35,557
Total assets (enter here and on line 13, Part II)		98,703,877		96,124,762
Accounts payable		76,862		70,821
Contributions, gifts, grants, etc., payable		6,932,941		6,967,141
(a) ~~Bonds and~~ notes payable (attach schedule)		2,740,000		3,045,615
(b) ~~Mortgages payable~~ Loaned Security Collateral		2,939,600		-0-
Other liabilities (attach schedule) Allocated Funds (5)		6,852,272		6,941,458
Total liabilities (enter here and on line 14, Part II)		19,541,675		17,025,035
Capital stock or principal fund balance Equity in Sub-		900		900
idiaries & unrestricted gifts		2,089,401		2,161,701
Paid-in or capital surplus Capital Gains Reserve		72,811,286		73,413,393
Retained earnings or income fund balance		4,260,615		3,523,733
Total net worth (enter here and on line 15, Part II)		79,162,202		79,099,727
Total Liabilities and Net Worth		98,703,877		96,124,762

organizations—Enter book value $ none and fair market value $ none
s held within the United States for investment.

(Form 990)
Department of the Treasury
Internal Revenue Service

(Except Private Foundations Filing Form 990-PF) Supplementary Information
► Attach to Form 990.

Name
WISCONSIN ALUMNI RESEARCH FOUNDATION

Employer identification number
39-083-3612

Part I Compensation of Officers, Directors, and Trustees (See page 1 of instructions)

Name and address	Social security number	Title	Time devoted to position	Compensation
See Schedule 8 for list of officers				

Part II Compensation of Five Highest Paid Employees (Other than included in Part I—see page 1 of instructions)

Name and address of employees paid more than $30,000	Social security number	Title	Compensation
John R. Pike, Madison, WI	397-24-9062	Managing Director	
Edwin O. Rosten, Madison, WI	391-32-1493	Managing Director to	1/31/76
Marvin Woerpel, Madison, WI	399-01-4057	Director of Licensing	
Howard W. Bremer, Madison, WI	395-18-8271	Patent Counsel	

Total number of other employees paid over $30,000 ►

Part III Five Highest Paid Persons for Professional Services (See page 1 of instructions)

Name and address of persons paid more than $30,000	Type of service	Compensation
Ross and Stevens, S.C., Madison, WI	Legal	45,089

Total number of others receiving over $30,000 for professional services ►

	Yes	No
the taxable year, has the organization (a) attempted to influence any national, State, or local legislation, or (b)		X
ated or intervened in any political campaign?		
," attach a statement giving a detailed description of such activities and a classified schedule		
xpenses paid or incurred and enter the total of such expenses here ► $		
ttach copies of any materials published or distributed by the organization in connection with such activities.		
related (other than by association with a statewide or nationwide organization) through common membership,	X	
ng bodies, trustees, officers, etc., to any other exempt or nonexempt organization (see page 1 of instructions)?		
," enter the name of organization ► See Attached and check whether it is ☐ Exempt or ☒ Nonexempt.		
ou during the year, either directly or indirectly, engaged in any of the following acts with a trustee, director, principal		
or creator of your organization, or any organization or corporation with which such person is affiliated:		
e, exchange, or leasing of property?	X	
nding of money or other extension of credit?	X	
rnishing of goods, services, or facilities?	X	
yment of compensation (or payment or reimbursement of expenses if in excess of $1,000)?	X	
nsfer of any part of your income or assets?	X	
he answer to any question is "Yes," attach a detailed statement explaining the transaction(s).		
the organization give notice as required by section 508(b) that it is not a private foundation?	X	
the organization has received a final ruling or determination letter from the Internal Revenue rvice that it is not a private foundation within the meaning of section 509(a), enter date of ing or letter ► Form 4653 10/20/70		
he organization has not received a final ruling or determination letter, indicate by checking applicable box below if the organization has received a ruling or determination letter based an ☐ Advance ruling or ☐ Extended advance ruling. Date of ruling or letter ►		
a statement explaining how you determine that individuals or organizations receiving disbursements from you, in ance of your exempt programs, are qualifying recipients. (See page 1 of instructions.)		
make grants for scholarships, fellowships, student loans, etc.?		X
organization a Public Interest Law Firm?		X
," attach information required by specif instruction for Part IV, line 7		

Reason for Non-Private Founda

ization is not a private foundation b
hurch. Section 170(b)(1)(A)(i).
chool. Section 170(b)(1)(A)(ii).
ospital. Section 170(b)(1)(A)(iii).
overnmental unit. Section 170(b)(1)(
nedical research organization opera
spital ► ime and address of

organization operated for the bene tion 170(b)(1)(A)(iv).
organization that normally receives eneral public. Section
)(b)(1)(A)(vi).
organization that normally receives nd unrelated business
able income (less section 511 tax) b) more than ⅓ of its
pport from contributions, members ns—subject to certain
eptions. Section 509(a)(2). (See
organization operated solely for t ed in Blocks 1 through
bove (or for the benefit of one o lse meeting the test of
tion 509(a)(2)) and is not cont ection 509(a)(3).

Exempt Organization Master File
Edit Sheet

1	2	3	4	5	6
1	2	1	2	0	9

7	8	9	10	11	12
0	2				

13	14	15	16	17	18
3	1				

19	20	21	22	23	24

25	26

Form 5386 (2-75) Department of the Treasury Internal Revenue Service

art V Reason for Non-Private Foundation Status (See instructions for definitions)—*Continued*

mplete the following table with respect to the beneficiary or supported organizations. (See instructions for Part V, Block 9.)

(a) Name of supported organization	(b) Block number from page 2
niversity of Wisconsin	2

(c) Relationship to your organization:
(1) Check here ► ☐ if the supported organizations appoint a majority of your governing board.
(2) Check here ► ☐ if the supported organizations have a majority of your governing board as members of their governing boards.
(3) Check here ► ☒ if (1) or (2) above does not apply. (For organizations "operated in connection with." See Regulation 1.509(a)–4.)

(d) If applicable, enter the number of beneficiary or supported organizations exempt under:
(1) Section 501(c)(4) . . . . .
(2) Section 501(c)(5) . . . . .
(3) Section 501(c)(6) . . . . .

(e) Check here ► ☒ if your organization's sole or primary function is to provide funds to the beneficiary or supported organizations.

☐ An organization organized and operated to test for public safety. Section 509(a)(4). (See page 3 of instructions.)

Support Schedule (Complete only if block 6, 7 or 8, page 2, is checked)

Calendar year (or fiscal year beginning in) ►	(a) 1974	(b) 1973	(c) 1972	(d) 1971	(e) Total
Gifts, grants and contributions received. (Do not include unusual grants. See line 24, page 4)					
Membership fees received					
Gross receipts from admissions, sales of merchandise, performance of services, or furnishing of facilities in any activity which is not an unrelated business within the meaning of section 513					
Gross income from interest, dividends, rents, royalties, and unrelated business taxable income (less section 511 tax) from businesses acquired by the organization after June 30, 1975					
Net income from unrelated business activities					
Tax revenues levied for your benefit and either paid to you or expended on your behalf					
The value of services or facilities furnished by a governmental unit to you without charge (do not include the value of services or facilities generally furnished to the public without charge)					
Other income (do not include gain or (loss) from sale of capital assets)—attach schedule					
Total of lines 11 through 18					
Line 19 less line 13					
Enter 1% of line 19					

Organizations described in blocks 6 or 7, page 2:
(a) Enter 2% of amount in column (e), line 20 . . . . .
(b) Attach a list showing the name of and amount contributed by each person (other than a governmental unit or "publicly supported" organization) whose total gifts for the above four-year period exceeded the amount shown in (a) above. Enter the sum of all excess amounts here . . . . .

Reason for Non-Private Foundation Status (See instructions for definitions)—Continued

nizations described in block 8, page 2:
Attach a list, with respect to amounts shown on lines 11, 12, and 13, showing the name of, and total amounts received in each year from, each person who is a "disqualified person," and enter the sum of such amounts for each year:

(1)..... (2)..... (3)..... (4).....

Attach a list showing the name and amount included in line 13 for each person (other than a "disqualified person"), but only if the amount for each year exceeds the greater of the amounts on line 21 for each year, or $5,000. The term "person" includes a bureau or agency of a governmental unit, and each person described in section 170(b)(1)(A)(i) through (vi). Enter the sum of such excess amounts for each year:

(1)..... (2)..... (3)..... (4).....

nizations described in Blocks 6, 7, and 8, page 2, that have received any unusual grants during any of the above taxable years, ch a list for each year showing the name of the contributor, the date and amount of grant, and a brief description of the nature uch grant. Do not include such grants in line 11 above. (See page 3 of instructions.)

WISCONSIN ALUMNI RESEARCH FOUNDATION

Other Income, Line 7, Part II, Form 990

July 1, 1975 - June 30, 1976

Equity in Current Year's Undistributed Earnings of Subsidiaries	$255,579.84
Total Other Income - Line 7, Part II, Form 990	$255,579.84

WISCONSIN ALUMNI RESEARCH FOUNDATION

Miscellaneous Expenses, Line 19A, Part II, Form 990

July 1, 1975 - June 30, 1976

Supplies		$170,472.23
Equipment Repairs		5,957.84
Electricity		79,515.75
Fuel & Gas		12,345.86
Water		1,457.22
Insurance		5,289.38
Laboratory Service		22,516.76
Royalties		102,002.58
Travel Expense		52,467.72
Postage, Freight & Express		1,817.48
Telephone & Related Services		12,475.33
Dues and Subscriptions		5,693.96
Legal Expense		98,467.99
Tax Case Expense		17,933.70
Consultation		4,000.00
Auditing		4,375.00
Miscellaneous		21,672.72
Stock Transfer & Safekeeping Expense		17,208.00
Payments on Life Income Contracts		75,608.54
Security and Protection		29,773.38
Janitorial Service		68,281.27
Elevator Maintenance		11,532.30
Total		$820,865.01
Less: Share charged to WARF Vitamin Concentrates, Inc.		1,000.00
Less: Directors Fees:		
Fort Dells, Inc.	$1,000.00	
Dells Boat Co.	2,000.00	
Quadrant Corp.	2,000.00	
Duck Trails, Inc.	2,000.00	
Wisconsin Ducks	1,000.00	
		8,000.00
Total General Expense, to Line 19A		$811,865.01

WISCONSIN ALUMNI RESEARCH FOUNDATION

Line 9B, Part II, Form 990
Grants Paid
July 1, 1975 - June 30, 1976

Grants to University of Wisconsin Madison, Wisconsin	Balance Payable 6/30/75	Additional Grants	Payments Made	Balance Unpaid 6/30/76
Annual Grants-in-aid	$6,732,940.52	$4,235,000.00	$4,200,799.62	$6,767,140.90
Grant for Astronomy Observatory	200,000.00	-0-	-0-	200,000.00
Donor Directed Funds	-0-	22,663.31	22,663.31	-0-
Special Research Fund	-0-	350,000.00	350,000.00	-0-
Line 33, Part II, 990	$6,932,940.52	$4,607,663.31	$4,573,462.93	$6,967,140.90

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WISCONSIN ALUMNI RESEARCH FOUNDATION

II. Balance Sheet, Form 990, Periods Ended
June 30, 1976

Form 990, Part I
Reconciliation of Net Worth

June 30, 1976

Total Net Worth 7/1/75 (Line 15)				$79,162,202.61
Plus: Accumulation of income within the period 7/1/75 - 6/30/76 (Line 12, Part I)				153,990.24
Plus: Restricted gifts transferred to unrestricted gifts				13,000.00
Less: Restricted gifts in Line 6, Part I (credited direct to Line 37, Part II, See Schedule 1)				9,649.29
Less: Current distribution of income to Special Funds			$533,808.42	
Less: Pay out from Special Funds				
Life Income	$ 68,608.54			
Donor Directed Grants to University of Wisconsin (See Schedule 4)	372,663.31		441,271.85	
				92,536.57
Less: Adjustment of security to nominal value*				93,079.24
Less: Grants - See Schedule 4				
Grants made in 1975-76	4,607,663.31			
Grants paid in 1975-76	4,573,462.93			34,200.38
Total Net Worth 6/30/76 (Line 15)				$79,099,727.37

* The following security was reduced to $1.00 because of present unascertainable value: 5,000 shares common stock of Development International.

WISCONSIN ALUMNI RESEARCH FOUNDATION

Form 990 Schedule 7

Depreciable Assets - Balance Sheet

July 1, 1975 - June 30, 1976

escription	2 Date Acquired	5 Method	6 Rate	3 Assets 6/30/76	4 Reserve 6/30/75	7 1975-76 (12 mos) Depreciatio
ffice Furniture & Equipment	VAR	SL	VAR	$ 130,235.19	$ 46,691.20	$ 14,211.1
uilding Equipment	VAR	SL	VAR	6,974.87	2,792.92	697.4
tation Wagon	1971	SL	20%	3,600.00	2,768.96	767.0
icensing Division Equipment	VAR	SL	VAR	80,682.91	35,540.28	6,883.0
easehold Improvements - Coating Lab	1968	SL	50%	6,213.70	6,213.70	-
ew Building	1971	AMORT	6% Int.	5,883,280.33	347,387.00	95,462.0
				$6,110,987.00	$441,394.06	$118,020.6
				Line 30 C Part II		Line 17 (A Part II

WISCONSIN ALUMNI RESEARCH FOUNDATION

Compensation of Officers and Trustees
Instruction 11, Part II, Form 990
July 1, 1975 through June 30, 1976

& Address	Soc. Sec. Number	Title (1)	Time Devoted	Compensation
lley L. Rewey lwaukee, Wisconsin		President	3	None
ld C. Slichter lwaukee, Wisconsin	389-01-8975	Vice President & Asst. Treasurer	4	None
. Frautschi dison, Wisconsin	390-09-4628	Vice President & Asst. Secretary	4	None
hard Mautz dison, Wisconsin	396-07-6912	Secretary & Treasurer	4	None
n W. Krueger ort Hills, N. J.	072-07-5813	Vice President & Asst. Treasurer	4	None
rt M. Bolz dison, Wisconsin		Vice President & Asst. Treasurer	4	None
iam O. Beers lmette, Illinois			2	None
rt F. Draper, Sr. ntrose, Colorado	323-05-3548		4	None
ld J. Erickson icago, Illinois			3	None
e J. Hood Crosse, Wisconsin	389-12-1117		3	None
h B. Johnson e, New York	086-22-7803		4	None
iam R. Kellett nasha, Wisconsin	392-05-9384		4	None
el Lenher lmington, Delaware	147-03-5227		3	None
s T. Lundberg usau, Wisconsin			4	None
. Murphy adwyne, Pennsylvania			3	None
e J. Roper lwaukee, Wisconsin			4	None
ond E. Rowland ayton, Missouri			3	None

All above are Trustees. The first six named bear the additional title indicated.

Time devoted - meetings attended during the period July 1, 1975, through June 30, 1976. In addition, Trustees are frequently called for consultation.